TELETEXT
DATA BRIDGE &
DATA GENERATOR

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Part

1

F.A. BERNHARDT GMBH

Teletext & Subtitling Products Group

FT-DBR 4
FT-DGS 4

TELETEXT & SUBTITLING PRODUCTS GROUP

Teletext Data Bridge FT-DBR 4
Teletext Data Generator FT-DGS 4
User Manual

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Chapter 1

Introduction

Main features of the FAB Teletext Data Generator FT-DGS 4 & Teletext Data Bridge FT-DBR 4

The manual describes the complete FAB Teletext Data Generator & FAB Teletext Data Bridge and all of its capabilities. In this manual the term "FAB Teletext Data Generator" will be used for describing the Data Bridge as well.

MAIN FEATURES

🗀 Information

Main features of the FAB Teletext Data Generator:

- Transmission of teletext EBU system B level 1, level 1.5 and level 2.5 according to ETS 300706
- Broadcast quality inserter for analogue and SDI video, BNC in/out with bypass relay in case of failure
- VBI lines 6 to 22, software selectable for odd/even fields
- Insertion of VITS (Vertical Interval Test Signals), VPS, PDC, WSS (Wide Screen Signaling) & VI (Video Index)
- 8000 teletext pages for transmission
- Transmission of FASTEXT, TOP, PDC
- Transmission of teletext packets 0-31 (Data broadcast)
- Packets 26 for national characters, packet 8/30
- Alarm clock page / World time clock
- Operation failure indication - automatic page transmission from pre-programmed static page generator
- Hot Standby operation possible
- Historic archive for up to 1 million teletext pages
- Automatic execution of commands at specified times and days

FUNCTIONAL DESCRIPTION

🗀 Information

FAB Teletext Data Generator is used to insert Teletext data into a video signal. FT-DGS 4 can insert teletext data into analogue video and SDI video.

The FAB Teletext System consists of the Data Generator and Teletext Editing Terminals. The terminals can communicate with the Data Generator where pages are stored to a built-in hard disk and can be transmitted as selected. The editing terminals can issue commands which the Data Generator has to execute. When a command is executed, the confirmation appears on the terminal. When the command is not executed, an error message appears.

The pages on the hard disk are stored in the same way as they are transmitted. They are numbered from 000 to 999, but only pages from 100 to 899 can be transmitted. The other 200 pages can only be used for storing of pages.

Each page can consist of up to 8191 subpages. The subpages are rotating automatically when transmitted. Also rotating pages are automatically numbered in the right upper corner when transmitted. Every rotating page can only be transmitted with all of its subpages. It is not possible to transmit only some subpages of a rotating page.

All pages from 000 to 999 can be named by the NAM command. Every name can consist of up to 12 characters and is automatically used in transmission of the TOP system.

All pages that are transmitted are automatically stored in a historic archive when their transmission is invoked. The archive provides storage for as many days as available by the capacity of hard disk. Together with the page additional information is also stored. See the ARC command for more information.

The very flexible command TMC can be used for automatic execution of commands at specific times on specific days.

Each user of the system has to register when he starts using the Data Generator. Since each user can have different priority, he can only use the commands corresponding to his priority.

Differences between FT-DBR 4 and FT-DGS 4

IMPORTANT

WARNING

🗀 Information

FAB Teletext Data Generator FT-DGS 4 and FAB Teletext Data Bridge FT-DBR 4 are based on the same hardware. The difference is that the Teletext Data Bridge FT-DBR 4 has limited functionality.

Following limitations are present in the Teletext Data Bridge FT-DBR 4:

- A maximum of two teletext pages can be transmitted from the normal transmission cycle. Generally a page 100 and a test page (199) will be transmitted.

The number of subtitle pages that can be transmitted on FT-DBR 4 and FT-DGS 4 is the same. Both units support the FT-RTT 4 Real Time Teletext Decoder option which allows decoding and transmission of teletexte pages in real time.

In the following manual the term “FAB Teletext Data Generator” will be used for describing the Data Bridge as well.

Important Warning

IMPORTANT

WARNING

🗀 Information

THE FAB TELETEXT DATA GENERATOR IS ALSO USED FOR STORING DATA. THEREFORE IT IS VERY IMPORTANT TO CREATE BACKUP SETS OF THE DATA WHICH IS STORED ON THE HARD DISKS OF THE DATA GENERATOR.

TO MAKE A BACKUP OF THE DATA WHICH IS STORED ON THE HARD DISKS TO TAPE OR OTHER MEDIA WE RECOMMEND THAT YOU USE ANY IMAGE CREATION PROGRAM LIKE NORTON GHOST OR ANY OTHER. THIS WILL ALLOW YOU TO RESTORE THE SYSTEM AT ANY TIME. IT IS ENTIRELY YOUR RESPONSIBILITY TO CREATE BACKUP SETS OF DATA. THE MANUFACTURER OR SELLER WILL NOT TAKE ANY RESPONSIBILITY IN EVENTUAL LOSS OF DATA.

Chapter 2

Installation & Cabling

Installation and Setup instructions for the FAB Teletext Data Generator FT-DGS 4

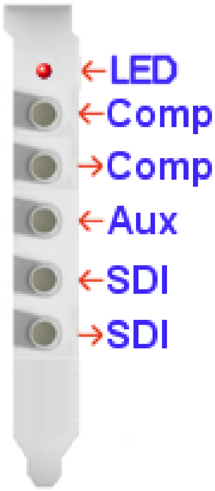
Hardware Installation

Video Connections

VIDEO SETUP

Information

FAB Teletext Data Generator can be used to generate video signal with teletext data or to insert teletext data into a video signal. This is possible for analogue video and SDI video. On the back of the teletext data generator you will find BNC connectors on the PCI-E card:



Comp	Composite analogue video (PAL 1Vpp)
Aux	Auxiliary video input (analogue PAL / SDI autodetect) for teletext decoder
SDI	SDI video (270 MBit/s 4:2:2)

Both Composite and SDI video outputs will always have teletext data so that the secondary output can be used as a monitor output. The video signal from the video input will only be present on the main video output (analogue or SDI, not on both).

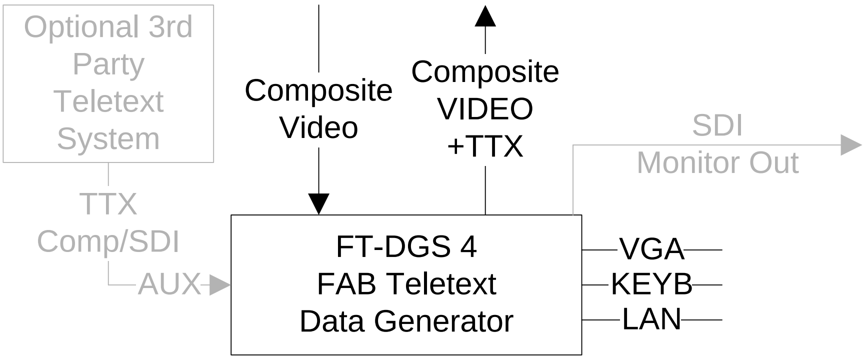
The LED is green when the Data Generator is transmitting teletext. It is red when the software is not started or when the teletext transmission software is not running.

On the following pages you will find examples how to connect the video cables depending whether you wish to use the Data Generator as a teletext inserter or as a generator of a video signal.

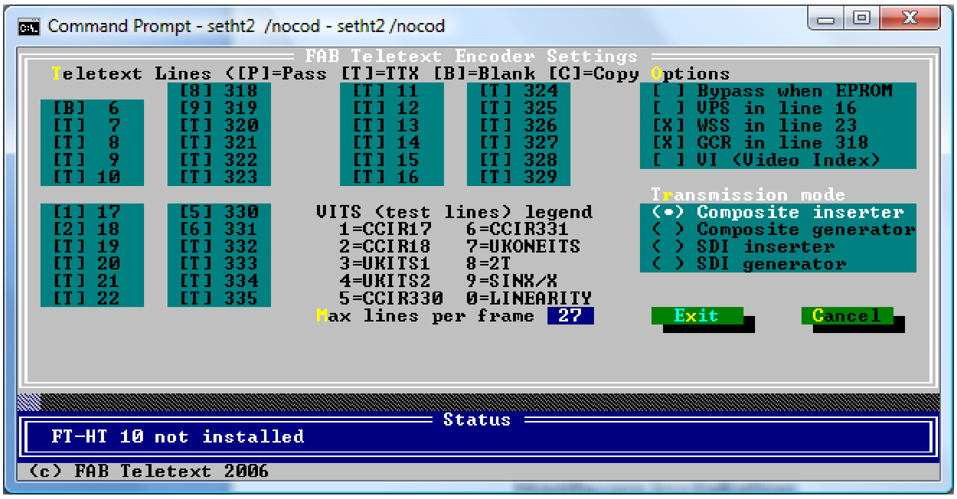
Below each picture you will also see how the software configuration has to be set in the CONFIG.EXE program.

Teletext inserter for analogue video

This configuration is normally used to insert teletext directly into analogue video. The unit has included a bypass functionality. On power failure or other device failure a relay switches the main video path to bypass letting through the original video signal (unchanged) which is present on the video input.



Teletext inserter for analogue video

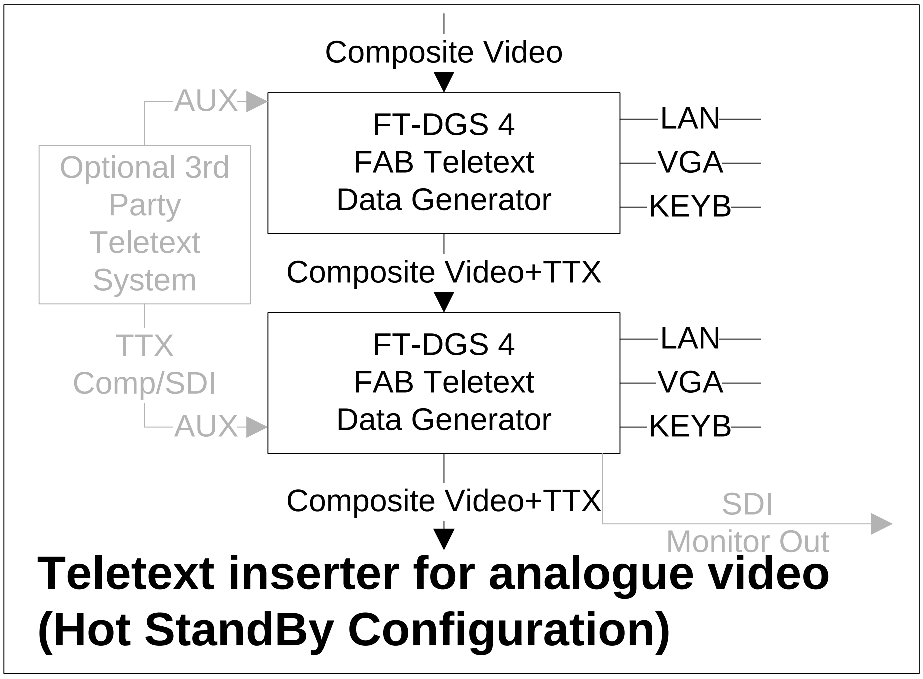


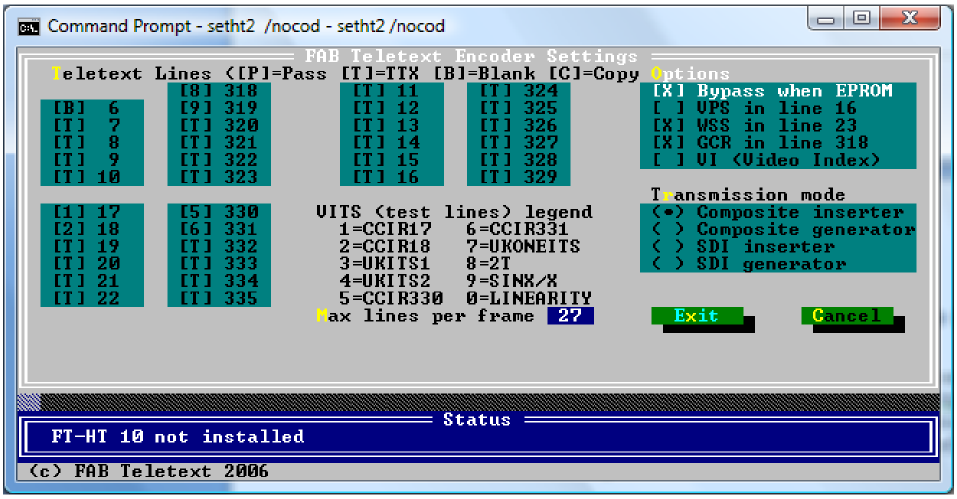
```
                    FAB Teletext Encoder Settings
 Teletext Lines ([P]=Pass [T]=TTX [B]=Blank [C]=Copy Options
               [8] 318        [T] 11    [T] 324     [ ] Bypass when EPROM
  [B]   6      [9] 319        [T] 12    [T] 325     [ ] VPS in line 16
  [T]   7      [T] 320        [T] 13    [T] 326     [X] WSS in line 23
  [T]   8      [T] 321        [T] 14    [T] 327     [X] GCR in line 318
  [T]   9      [T] 322        [T] 15    [T] 328     [ ] VI (Video Index)
  [T]  10      [T] 323        [T] 16    [T] 329
                                                    Transmission mode
  [1] 17       [5] 330      VITS (test lines) legend  (•) Composite inserter
  [2] 18       [6] 331        1=CCIR17   6=CCIR331    ( ) Composite generator
  [T] 19       [T] 332        2=CCIR18   7=UKONEITS   ( ) SDI inserter
  [T] 20       [T] 333        3=UKITS1   8=2T         ( ) SDI generator
  [T] 21       [T] 334        4=UKITS2   9=SINX/X
  [T] 22       [T] 335        5=CCIR330  0=LINEARITY
                            Max lines per frame  27    Exit        Cancel

                               Status
  FT-HT 10 not installed
 (c) FAB Teletext 2006
```

Teletext inserter for analogue video (Hot-StandBy Configuration)

In this configuration two FAB Teletext Data Generators are used to insert teletext into analogue video. Both units have included a bypass functionality. On power failure or other device failure a relay switches the main video path to bypass letting through the original video signal (unchanged) which is present on the video input.

Please note that the setting “Bypass when EPROM” must be enabled on both units in this configuration.

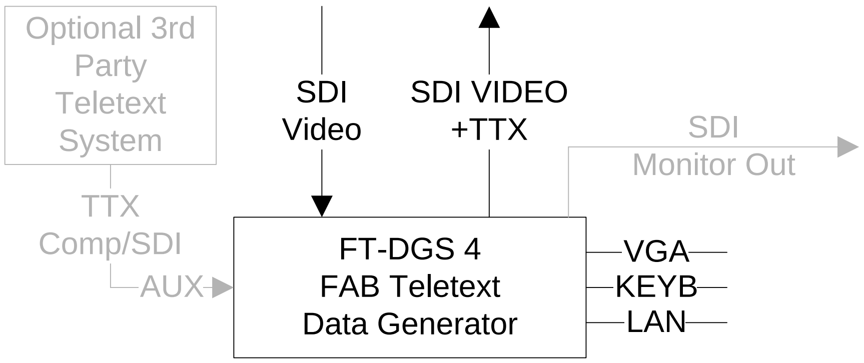




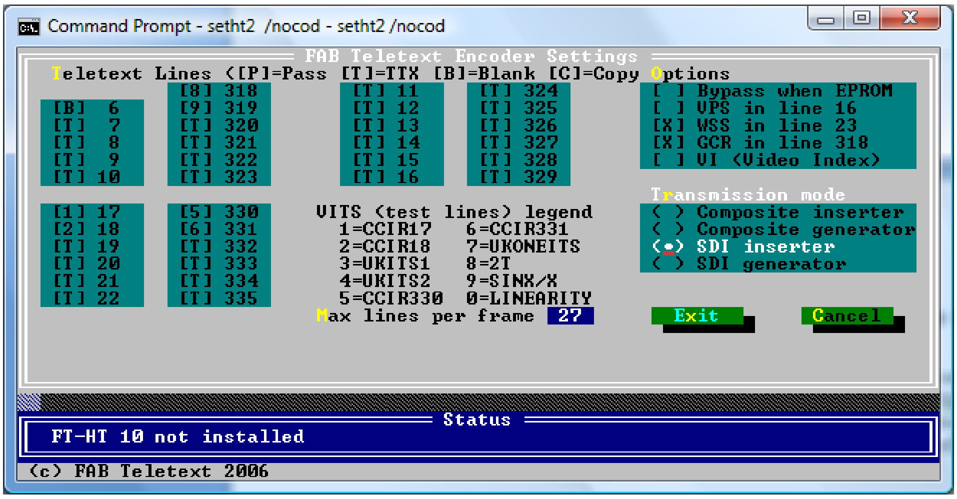
```
                      FAB Teletext Encoder Settings
  Teletext Lines ([P]=Pass [T]=TTX [B]=Blank [C]=Copy Options
               [8] 318      [T] 11    [T] 324      [X] Bypass when EPROM
   [B]   6     [9] 319      [T] 12    [T] 325      [ ] VPS in line 16
   [T]   7     [T] 320      [T] 13    [T] 326      [X] WSS in line 23
   [T]   8     [T] 321      [T] 14    [T] 327      [X] GCR in line 318
   [T]   9     [T] 322      [T] 15    [T] 328      [ ] VI (Video Index)
   [T]  10     [T] 323      [T] 16    [T] 329
                                                   Transmission mode
   [1] 17      [5] 330     VITS (test lines) legend (•) Composite inserter
   [2] 18      [6] 331       1=CCIR17    6=CCIR331 ( ) Composite generator
   [T] 19      [T] 332       2=CCIR18    7=UKONEITS ( ) SDI inserter
   [T] 20      [T] 333       3=UKITS1    8=2T      ( ) SDI generator
   [T] 21      [T] 334       4=UKITS2    9=SINX/X
   [T] 22      [T] 335       5=CCIR330   0=LINEARITY
                           Max lines per frame  27    Exit      Cancel

                                Status
   FT-HT 10 not installed
 (c) FAB Teletext 2006
```

Teletext inserter for SDI video

This configuration is normally used to insert teletext directly into SDI video. SDI video is passed through including embedded audio and other ancillary SDI data. The unit has included a bypass functionality. On power failure or other device failure a relay switches the main video path to bypass letting through the original video signal (unchanged) which is present on the video input. In such a case both the input and output SDI cable count as one cable when calculating the maximum cable length for SDI connections. Therefore it is recommended to use cable lengths well below half of the maximum cable length for both input and output cable.



Teletext inserter for SDI video

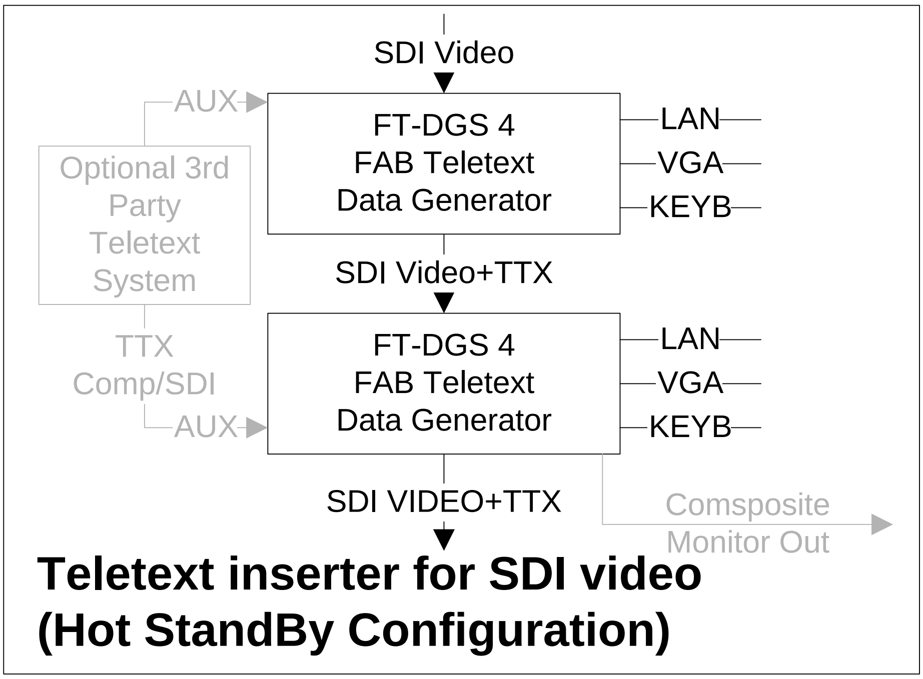


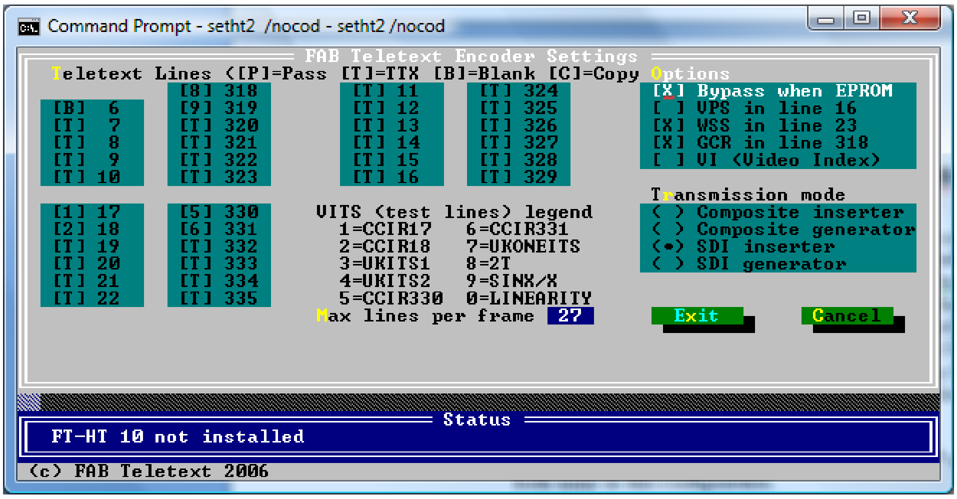
```
                   FAB Teletext Encoder Settings
 Teletext Lines ([P]=Pass [T]=TTX [B]=Blank [C]=Copy Options
             [8] 318         [T] 11     [T] 324     [ ] Bypass when EPROM
 [B]   6     [9] 319         [T] 12     [T] 325     [ ] VPS in line 16
 [T]   7     [T] 320         [T] 13     [T] 326     [X] WSS in line 23
 [T]   8     [T] 321         [T] 14     [T] 327     [X] GCR in line 318
 [T]   9     [T] 322         [T] 15     [T] 328     [ ] VI (Video Index)
 [T]  10     [T] 323         [T] 16     [T] 329
                                                     Transmission mode
 [1]  17     [5] 330      VITS (test lines) legend  ( ) Composite inserter
 [2]  18     [6] 331        1=CCIR17    6=CCIR331    ( ) Composite generator
 [T]  19     [T] 332        2=CCIR18    7=UKONEITS   (•) SDI inserter
 [T]  20     [T] 333        3=UKITS1    8=2T         ( ) SDI generator
 [T]  21     [T] 334        4=UKITS2    9=SINX/X
 [T]  22     [T] 335        5=CCIR330   0=LINEARITY
                          Max lines per frame  27     Exit       Cancel

                                Status
   FT-HT 10 not installed
 (c) FAB Teletext 2006
```

Teletext inserter for SDI video (Hot-StandBy Configuration)

In this configuration two FAB Teletext Data Generators are used to insert teletext into SDI video. SDI video is passed through including embedded audio and other ancillary SDI data. Both units have included a bypass functionality. On power failure or other device failure a relay switches the main video path to bypass letting through the original video signal (unchanged) which is present on the video input. In such a case both the input and output SDI cable count as one cable when calculating the maximum cable length for SDI connections. Therefore it is recommended to use cable lengths well below half of the maximum cable length for both input and output cable.

Please note that the setting "Bypass when EPROM" must be enabled on both units in this configuration.

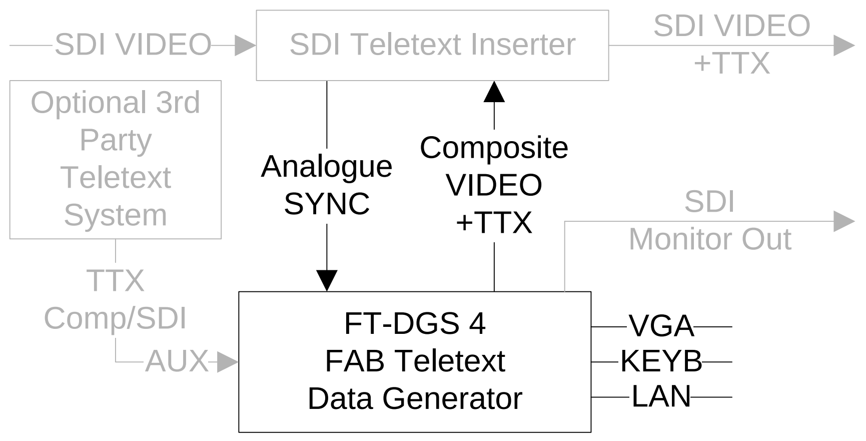




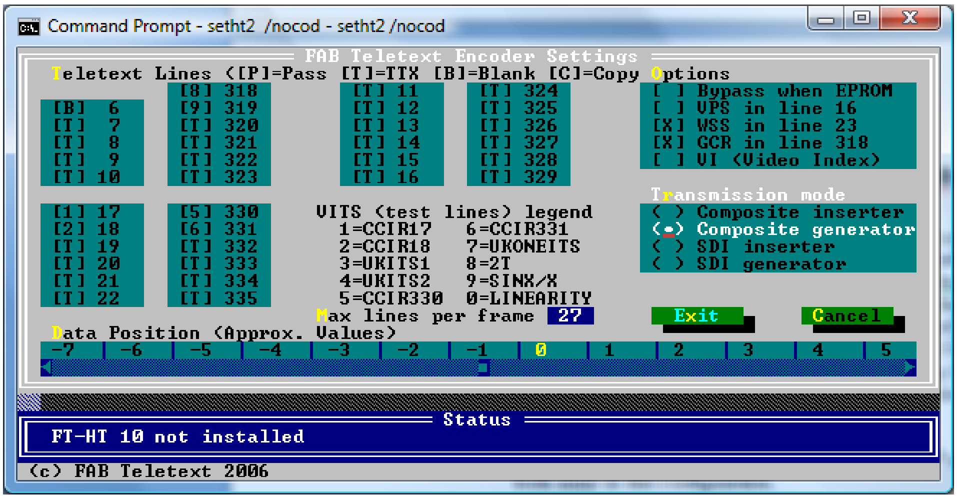
```
                    FAB Teletext Encoder Settings
  Teletext Lines ([P]=Pass [T]=TTX [B]=Blank [C]=Copy Options
              [8] 318        [T] 11   [T] 324     [X] Bypass when EPROM
  [B]   6     [9] 319        [T] 12   [T] 325     [ ] VPS in line 16
  [T]   7     [T] 320        [T] 13   [T] 326     [X] WSS in line 23
  [T]   8     [T] 321        [T] 14   [T] 327     [X] GCR in line 318
  [T]   9     [T] 322        [T] 15   [T] 328     [ ] VI (Video Index)
  [T]  10     [T] 323        [T] 16   [T] 329
                                                   Transmission mode
  [1]  17     [5] 330    VIITS (test lines) legend ( ) Composite inserter
  [2]  18     [6] 331      1=CCIR17    6=CCIR331  ( ) Composite generator
  [T]  19     [T] 332      2=CCIR18    7=UKONEITS (•) SDI inserter
  [T]  20     [T] 333      3=UKITS1    8=2T       ( ) SDI generator
  [T]  21     [T] 334      4=UKITS2    9=SINX/X
  [T]  22     [T] 335      5=CCIR330   0=LINEARITY
                         Max lines per frame  27

                                   Status
  FT-HT 10 not installed
 (c) FAB Teletext 2006
```

Teletext generator for analogue video

This configuration is normally used when an external SDI teletext inserter is used to insert teletext into SDI video.



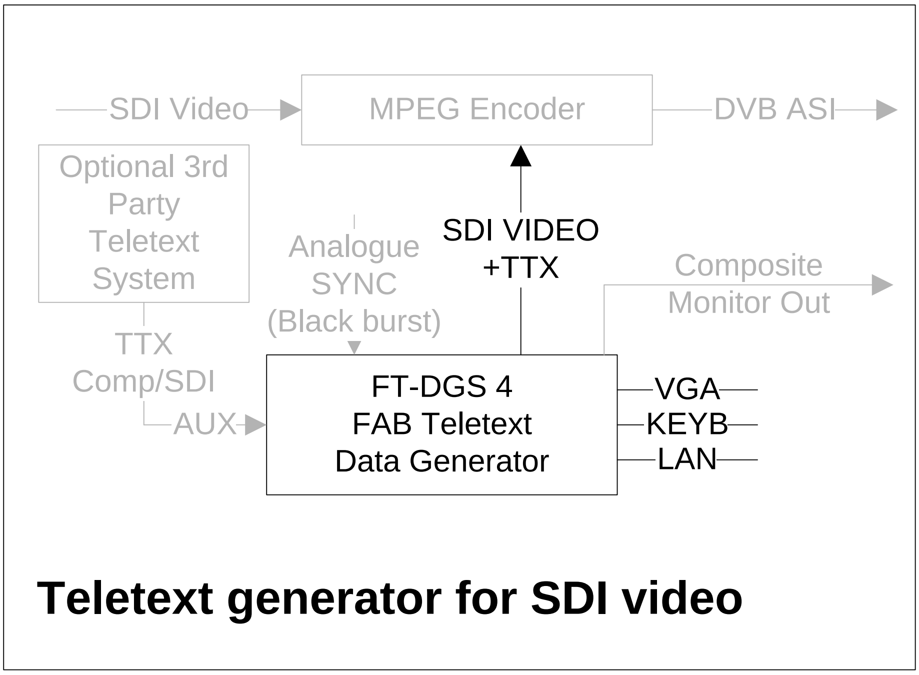
Teletext generator for analogue video

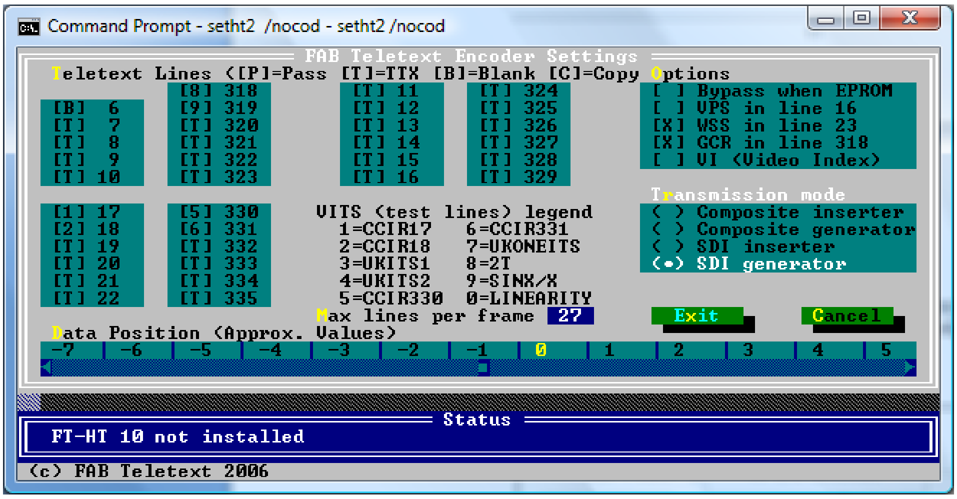


```
                      FAB Teletext Encoder Settings
 Teletext Lines ([P]=Pass [T]=TTX [B]=Blank [C]=Copy Options
             [8] 318          [T] 11    [T] 324     [ ] Bypass when EPROM
 [B]  6      [9] 319          [T] 12    [T] 325     [ ] VPS in line 16
 [T]  7      [T] 320          [T] 13    [T] 326     [X] WSS in line 23
 [T]  8      [T] 321          [T] 14    [T] 327     [X] GCR in line 318
 [T]  9      [T] 322          [T] 15    [T] 328     [ ] VI (Video Index)
 [T] 10      [T] 323          [T] 16    [T] 329

                                                     Transmission mode
 [1] 17      [5] 330      VITS (test lines) legend  ( ) Composite inserter
 [2] 18      [6] 331        1=CCIR17    6=CCIR331   (•) Composite generator
 [T] 19      [T] 332        2=CCIR18    7=UKONEITS  ( ) SDI inserter
 [T] 20      [T] 333        3=UKITS1    8=2T        ( ) SDI generator
 [T] 21      [T] 334        4=UKITS2    9=SINX/X
 [T] 22      [T] 335        5=CCIR330   0=LINEARITY
                          Max lines per frame  27    Exit        Cancel
 Data Position (Approx. Values)
 -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5

                                  Status
  FT-HT 10 not installed
(c) FAB Teletext 2006
```

Teletext generator for SDI video

This configuration is normally used when providing teletext for insertion into DVB streams. Analogue sync input is optional in this configuration.


SDI Video
MPEG Encoder
DVB ASI
Optional 3rd Party Teletext System
SDI VIDEO +TTX
Analogue SYNC (Black burst)
Composite Monitor Out
TTX Comp/SDI
AUX
FT-DGS 4 FAB Teletext Data Generator
VGA
KEYB
LAN
Teletext generator for SDI video

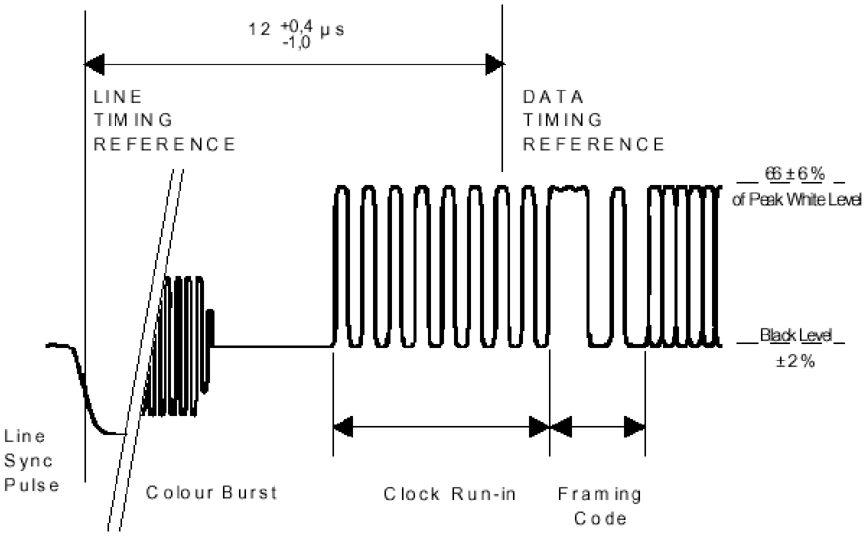


```
                    FAB Teletext Encoder Settings
 Teletext Lines ([P]=Pass [T]=TTX [B]=Blank [C]=Copy Options
           [8] 318          [T] 11   [T] 324   [ ] Bypass when EPROM
 [B]  6    [9] 319          [T] 12   [T] 325   [ ] VPS in line 16
 [T]  7    [T] 320          [T] 13   [T] 326   [X] WSS in line 23
 [T]  8    [T] 321          [T] 14   [T] 327   [X] GCR in line 318
 [T]  9    [T] 322          [T] 15   [T] 328   [ ] VI (Video Index)
 [T] 10    [T] 323          [T] 16   [T] 329

                                               Transmission mode
 [1] 17    [5] 330     VITS (test lines) legend ( ) Composite inserter
 [2] 18    [6] 331       1=CCIR17   6=CCIR331  ( ) Composite generator
 [T] 19    [T] 332       2=CCIR18   7=UKONEITS ( ) SDI inserter
 [T] 20    [T] 333       3=UKITS1   8=2T       (•) SDI generator
 [T] 21    [T] 334       4=UKITS2   9=SINX/X
 [T] 22    [T] 335       5=CCIR330  0=LINEARITY
                       Max lines per frame  27   Exit      Cancel
 Data Position (Approx. Values)
 -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5

                              Status
  FT-HT 10 not installed

 (c) FAB Teletext 2006
```

Teletext timing selection

In analogue and SDI generator mode it is possible to set the data position. When data position is set to 0 this means that the position is set exactly to 12µs as defined by the teletext specification.

The teletext specification proposes the setting of 12µs between the sync reference and penultimate "1" of the clock run in (-0.1µs / +0.1µs is allowed).



This timing must be measured at the end of transmission chain and can be modified in the CONFIG.EXE program of the Data Generator.

In Inserter modes the timing is factory set to exactly 12µs as defined by the teletext specification and can not be modified.

LAN Connection

LAN CONNECTION

🗀 Information

The Data Generator is delivered with one or more Ethernet connections. Please make sure that you connect the Ethernet cable into the LAN port one which is clearly marked at the back of the unit.

Serial Terminal Connection

TERMINAL CONNECTION

🗁 Information

The Data Generator is delivered with one RS-232 serial port for connection with terminals and subtitle generators. In accordance with Electronic Industries Association (EIA) specifications for RS-232, terminals running at 9600 bit/s cannot be farther than 20 meters from the Teletext Data Generator.

NOTE: To avoid interference with radio and television reception, and to remove noise from the data paths, you must use shielded cables.

Pin assignments and locations for terminal cable are as following:

System 9-pin D-Sub	Terminal 9-pin D-Sub	Terminal 25-pin D-Sub
3 (TX)	**2 (RX)**	**3 (RX)**
2 (RX)	**3 (TX)**	**2 (TX)**
5 (GND)	**7 (GND)**	**7 (GND)**

Modem Connection

MODEM CONNECTION

🗁 Information

Instead of terminal a modem can be connected to the RS-232 port. Hayes compatible modems with 300/1200/2400/4800/9600/14400/38400 baud CCITT and automatic speed selection are supported.

Pin assignments and locations for the modem cable are as following:

System 9-pin	Modem 25-pin	Name
1	8	**CD**
2	3	**RX**
3	2	**TX**
4	20	**DTR**
5	7	**GND**
7	4	**RTS**
8	5	**CTS**
-	1	**PGND**
9	22	**RI**

Before a modem is connected to the Data Generator it has to be set up on any other computer using any of the available communication programs. Following is one of the possible setup sequences (following commands should be sent to the modem). Check that you use the correct command formats for your modem because they can be different.

```
ATX3&C1&D2S7=90
```

GPI Input Connection

GPI INPUT CONNECTION

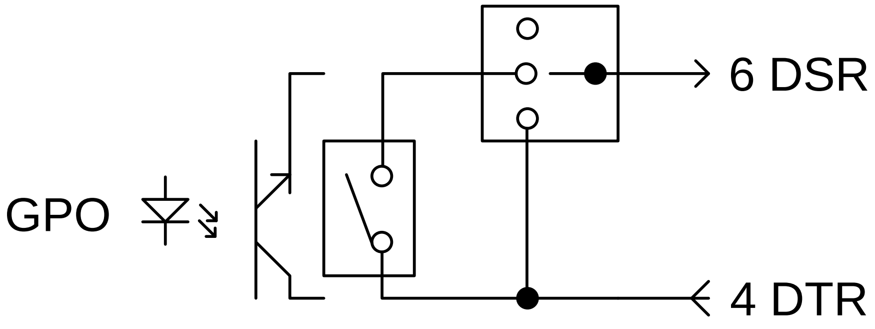
🗁 Information

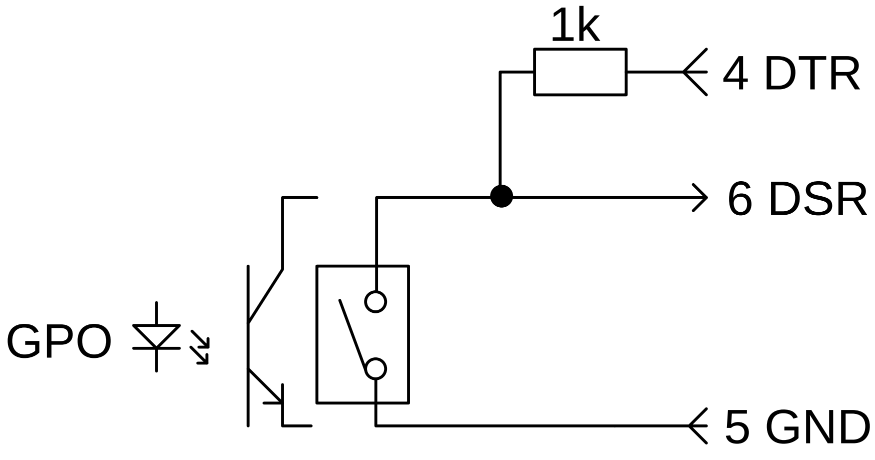
The Data Generator can be controlled with GPI by making a connection to the serial COM1 port. 4 GPI inputs are available and the pins CD, RI, DSR and CTS are used for GPI input.

System 9-pin D-Sub	Pin Description
1 (CD)	**Carrier Detect**
9 (RI)	**Ring Indicator**
6 (DSR)	**Data Set Ready**
8 (CTS)	**Clear To Send**
4 (DTR)	**Data Terminal Ready**
5 (GND)	**Ground**

The GPI inputs CD, RI, DSR and CTS detect whether the pin is high or low. The best way to implement this is to shorten a connection from the pin DTR which is always high to the GPI input pins CD, RI, DSR and CTS.

The following two pictures show possible implementations





You will find the description on how to program actions for GPI inputs in the GPI inputs section later in this manual.

Software Configuration

Copying Data from FT-DGS 2.5

COPYING DATA

Information

To copy all data from an older unit FT-DGS 2.5 FAB Teletext Data Generator to FT-DGS 4 please do the following:

Copy all files from the following directories from the old unit to the new unit:

C:\KODS\000
C:\KODS\100
C:\KODS\200
C:\KODS\300
C:\KODS\400
C:\KODS\500
C:\KODS\600
C:\KODS\700
C:\KODS\800
C:\KODS\900
C:\KODS\HILEVEL
C:\KODS\TIME
C:\KODS\TTX

The above files can be copied to a few floppy disks. We suggest that you use a utility like PKZIP or ARJ to compress the files and put them on one or more floppy disks.

If you wish to copy also the content of the historic archive then you will also have to copy this directory:

C:\KODS\BACKUP

We suggest that you do not copy this directory because there may be more than 1GB of data present in this directory.

After copying these directories please start the program CONFIG.EXE which will adapt the configuration files to the format required by the Data Generator FT-DGS 4.

PLEASE DO NOT COPY THE CONTENTS OF THE DIRECTORY C:\KODS

Installing a Software Update

UPDATING SOFTWARE

🗀 Information

There are new versions of software available from FAB on a regular basis. New software versions are available on FAB's website for download.

Installing New Software Version

To install a software update you will always have to download the compressed self extracting EXE file which contains the necessary files for the software update. Please start the downloaded EXE file to extract all files into a folder on a PC with Windows (not on the Data Generator).

There are several ways how a software update can be installed:

- Using a bootable USB Stick
  The file README.PDF explains how to create a bootable USB Stick and use it to update the software and firmware of the Data Generator.

- Using the program DGUTILS.EXE to transfer the software and firmware update over network (TCP/IP) to the Data Generator
  DGUTILS.EXE is a program that can be started under Windows. It can connect over TCP/IP to the Data Generator and perform certain actions like reading all pages to the local hard disk, setting the clock or installing the software update. You will find more details about this program in the section DGUtils.exe program later in this manual.

- Manually
  SOFTWARE.EXE is the software update file for the Data Generator. To install it copy it to directory C:\KODS of the data generator and start it by typing SOFTWARE.
  FIRMWARE.EXE is the firmware update file for the Data Generator. To install it copy it to directory C:\KODS of the data generator and start it by typing FIRMWARE. Please note that you will have to switch off the data generator after installing the new firmware.

Installing the Software Update via Network

The new software can also be installed over network by using the program DGUtils.exe. You will have to start this program under Windows with the following parameters after unpacking the file with the software update:

```
DGUtils ipaddress:SNF /LOGIN=9,9 /FILE=SOFTWARE.EXE
```

To install the new firmware:

```
DGUtils ipaddress:SNF /LOGIN=9,9 /FILE=FIRMWARE.EXE
```

You will have to replace 9,9 by the actual username and password for the account with priority 9.

Please note that the software update and the firmware update can take several minutes and the Data Generator may not be available within that time and teletext will not be transmitted. After a few minutes when the installation is finished the Data Generator will restart automatically and it will be available again.

Please note also that the firmware update requires that someone will have to switch off the unit and on again at any time after the installation is finished.

Teletext Configuration Program

When the computer is switched on it will automatically try to execute the Teletext Transmission program. To be able to change the configuration the Teletext Transmission program must be interrupted. This can be done by typing QUIT after the Teletext Transmission program checked all pages on the hard disk. When you stopped the Transmission program type CONFIG [RETURN] to run the configuration program or TET [RETURN] to restart the teletext Transmission program.

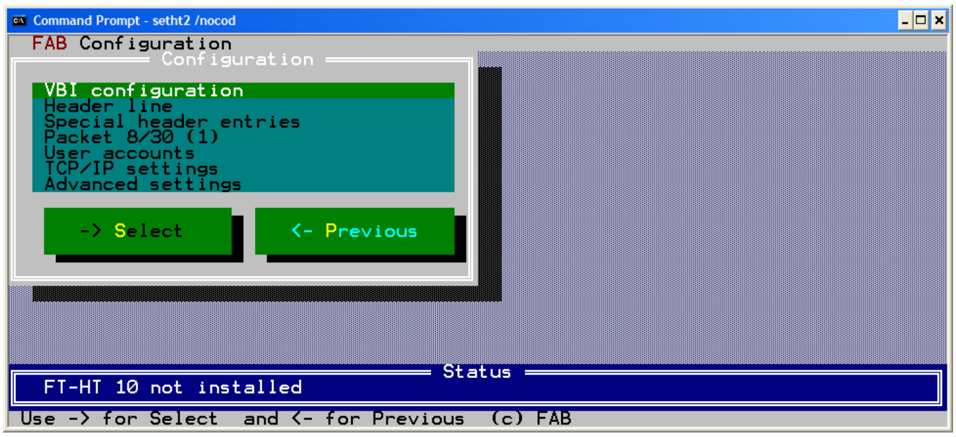
When the teletext Transmission program is not running, pages are transmitted from the static page generator. Transmission of subtitles or any other communication with the terminals is not possible.

If in any case the computer would come to the state where there is no response to the keys, you should use the RESET key to force repeated start or simply switch it OFF and ON again.

The Teletext Configuration Program must be run from the DOS prompt (after exiting the Teletext Transmission program) by typing CONFIG [RETURN].

The CONFIG program enables setting different transmission parameters and is divided into levels. Use the arrow up and down keys to select the option you wish to change and press the arrow right key to execute the selected option. When you are prompted to enter some data you can store the entered data by pressing the RETURN key.

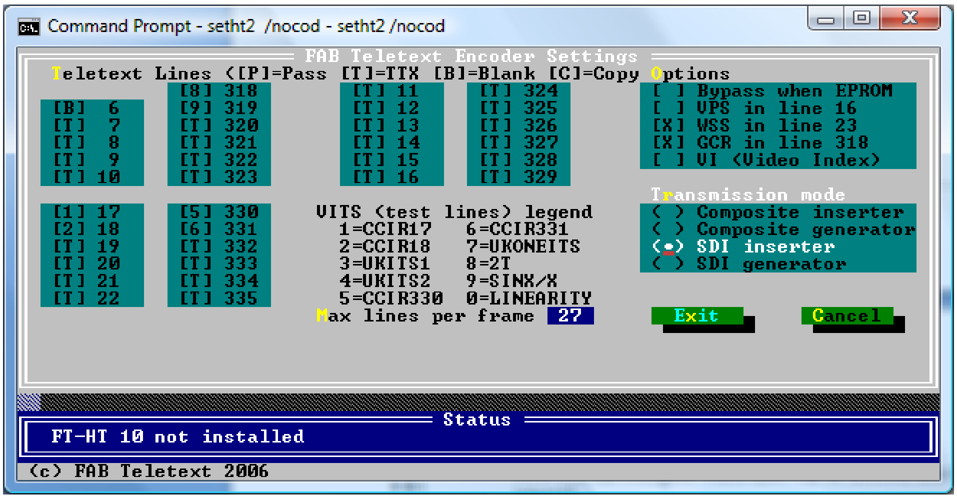
To exit the CONFIG program press the RETURN key until the DOS prompt is displayed. To start the transmission program type TET [RETURN].



```
FT-HT 10 not installed
Use -> for Select  and <- for Previous  (c) FAB
```

VBI Configuration

Here you can configure which lines will be inserted into the vertical blanking interval:



```
                      FAB Teletext Encoder Settings
Teletext Lines ([P]=Pass [T]=TTX [B]=Blank [C]=Copy Options
               [8] 318         [T] 11      [T] 324        [ ] Bypass when EPROM
 [B]  6        [9] 319         [T] 12      [T] 325        [ ] VPS in line 16
 [T]  7        [T] 320         [T] 13      [T] 326        [X] WSS in line 23
 [T]  8        [T] 321         [T] 14      [T] 327        [X] GCR in line 318
 [T]  9        [T] 322         [T] 15      [T] 328        [ ] VI (Video Index)
 [T] 10        [T] 323         [T] 16      [T] 329
                                                          Transmission mode
 [1] 17        [5] 330      VITS (test lines) legend      ( ) Composite inserter
 [2] 18        [6] 331        1=CCIR17    6=CCIR331       ( ) Composite generator
 [T] 19        [T] 332        2=CCIR18    7=UKONEITS      (•) SDI inserter
 [T] 20        [T] 333        3=UKITS1    8=2T            ( ) SDI generator
 [T] 21        [T] 334        4=UKITS2    9=SINX/X
 [T] 22        [T] 335        5=CCIR330   0=LINEARITY
                            Max lines per frame  27

                                  Status
  FT-HT 10 not installed
 (c) FAB Teletext 2006
```

For every VBI line from 6 to 22 you can define what data should be inserted:

B	The line will be blanked, content present on the video input will be deleted in this line
P	The line will be passed through, content present on the video input will also be present on the video output
T	Teletext data will be inserted into this line, content present on the video input will be deleted
C	Teletext data will be copied into this line from the same line on the AUX input

The legend displayed on the screen explains which VITS line will be inserted when any value between 0 and 9 is selected.

Bypass when EPROM
This must be enabled only when two Teletext Data Generators are connected serially in hot-standby configuration. This makes sure that if one data generator fails then it will go to bypass and therefore the teletext from the other teletext data generator will always be visible on the output.

VPS in line 16
When this is enabled VPS data (IRT 8R2) will be inserted into line 16. The content can be defined in Advanced settings. It can also be modified dynamically by the CFG command.

WSS in line 23
When this is enabled the WSS (Wide Screen Signaling ETS 300294) signal will be inserted in line 23. The content can be defined in Advanced settings. It can also be modified dynamically by the CFG command.

GCR in line 318
When this is enabled the GCR (Ghost Cancellation Reference ETS 300732) signal will be inserted in line 318.

VI (Video Index)
When this is enabled the VI/AFD data is inserted into the SDI signal (Video Index / Active Format Description ETSI TS 101 154)

The transmission mode must be set as explained in Video Connections.

Max lines per frame: This is the maximum sum of the teletext lines in odd and even fields. For transmission of teletext in MPEG transport streams good values for this field are: 3, 7, 11, 15, 19, 23, 27. Setting this value correctly may increase the speed of teletext transmission.

Header Line

HEADER LINE

Information

Here you should define the header line that will be transmitted on all pages. Move the position of the arrow pointing to a character in the header line by using the cursor keys. Simply type the text that should be displayed in the header line. By pressing F1 you can enter any code (0-127) for the character the arrow is pointing to. This way you should select the colour for date and time. By pressing F2 you can select the position of the page number in the header line. By pressing F3 you can delete the page number, which means that the page number will not be displayed in the header line on any page.

F4 enables entering "Special Entries". These are: Day, Month, Year, Century, Day of Week, Hours, minutes, Seconds. Each of these may require a different length what is also displayed in the Header Line display on the upper part of the screen.

Special Header Entries

SPECIAL ENTRIES

Information

Special Header Entries which are entered in the Header Line can be defined here. That means that it is possible to enter JANUARY instead of 01 in the Month field. You can also enter a teletext control character in each of these fields by holding down the ALT key and typing the number of the control character on the numeric keypad. Type ALT+180 for teletext code 0, ALT+181 for code 1, ... To accept what you have changed press Enter, otherwise ESC.

Note: No national characters like @,`,8,ä,ö,ü or similar can be used in special entries as the character set is defined by the page itself and is not known in advance.

Packet 8/30 (1)

PACKET 8/30

Information

Recommended Setting: Enabled

Select Disabled if you do not wish to have the packet 8/30 transmitted. If you wish to retransmit the packet 8/30 which is available on the video input the select RTT Decoder A or B as the source.

When you enable the packet 8/30 you will be prompted to enter the text that should be displayed in packet 8/30. Some TV sets display this text at the bottom of the screen when the viewer switches to the channel transmitting packet 8/30. Normally the text should be the name of the TV station transmitting this teletext service.

The difference to GMT should be set corresponding to the time zone you are in, the initial page number should be 100 and network identification should be set correctly for the TV station.

You can find out which CNI code has to be entered in this document:

http://www.ebu.ch/CMSimages/en/tec_info_tr231-2006_tcm6-41792.pdf

User Accounts

Here you can define up to 998 login passwords for users of editing terminals. To be able to do this you must first enter your local name and password.

You can use this option to add a new password for a new user of an editing terminal. The following information can be defined for each password.

Option	Description
Username	**The name of the user**
Password	**The password of the user**
Priority	**The priority of the user**
Lowest page	**The lowest page that can be used (000)**
Highest page	**The highest page that can be used (8FF)**
Init. Dir.	**The initial directory for the user**
Full read access	**When disabled the user can not read pages outside of the defined interval**
Hex pages read	**When enabled the user can read pages with hexadecimal numbers**
Advanced commands	**When enabled the user can use advanced commands**
Direct access	**When disabled the user can not log in with his password when connected via a direct serial line or via network**
Modem access	**When disabled the user can not log in with his password when connected via modem or ISDN**
Max SIP commands	**The number of SIP commands that the user is allowed to execute within 10 seconds**
Allowed X/31 streams	**X/31 streams that are allowed to be used by this user**

To be able to define the priority you should check which commands are available in which priority and decide which commands should be allowed for the user. Priority 9 is the System Administrator priority so that all commands are allowed. Priority 1 is the priority that should be used by a normal user.

The Lowest and Highest Page define the interval of pages that the user will be able to write. The pages are organised in the following order: 000 to 999, 10A to 8FF. To allow a user to access page 155 but also 15F you have to specify lowest page 155 and highest page 15F. This will also allow the user to read all pages 155 to 999 and 10A to 15F. To be able to define exactly 2 pages that a user can use it is better to define two user accounts. To exclude all pages that a user can write from the interval, specify lowest page 001 and highest page 000.

When Full Read Access is enabled the user will be able to read pages 000 to 999 outside of the interval, otherwise not. When Hex Pages Read is enabled the user will be able to read pages with hexadecimal page numbers, otherwise not if they are outside of the interval Lowest/Highest Page.

You can enable or disable the password's validity over modem or direct connection. Enable Direct access if the user should be able to register over direct serial line or network and enable Modem access if the user should be able to register when accessing the system over modem.

The user can use Advanced commands when the setting is enabled. Init. Dir. is the directory to which the user should be moved after he registers. It is recommended to create a directory for each user or a group of users. See the section File System of the User Manual for details on directories.

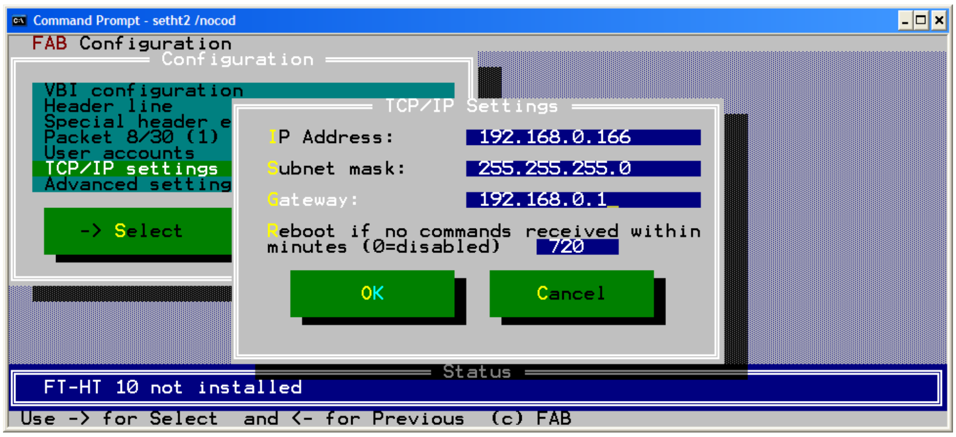
Each password gets a new password number which can be used to change the password's data by using the command USR.

TCP/IP Settings

TCP/IP SETTINGS

Information

Here you can define the IP Address, subnet mask and the default gateway:



IP Address: 192.168.0.166
Subnet mask: 255.255.255.0
Gateway: 192.168.0.1_
Reboot if no commands received within minutes (0=disabled) 720

FT-HT 10 not installed

Use -> for Select and <- for Previous (c) FAB

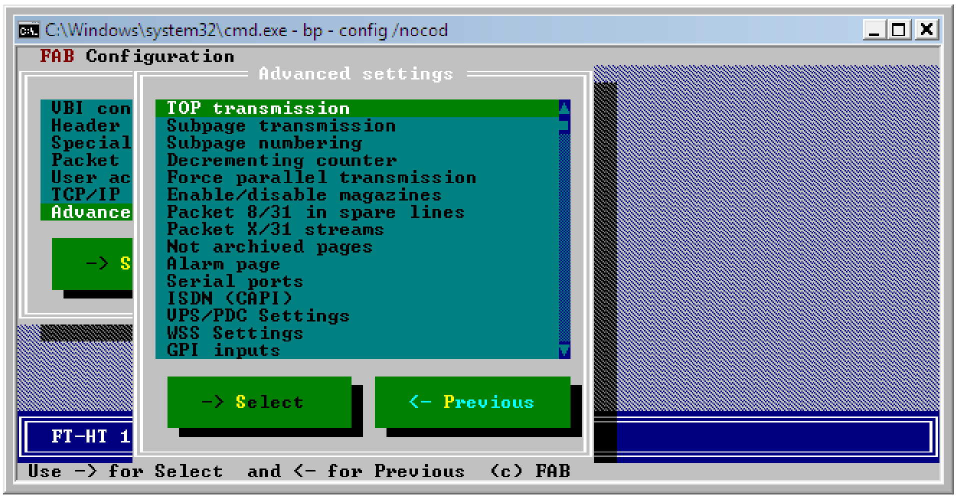
The setting which defines “Reboot if no commands received within X minutes” should generally be set to 0. If FAB Network Controller is used then this setting can be set to 10 or 12 minutes because FAB Network Controller will send commands to the Data Generator at least every 5 minutes.

Advanced Settings

ADVANCED SETTINGS

Information

Here you can define advanced settings



TOP Transmission

TOP

Information

Here you can define whether the TOP pages will be transmitted by the Data Generator or not. This should be disabled for all countries except Germany, Austria, Switzerland and Slovenia.

Subpage Transmission

SUBPAGES

Information

Here you can define how pages with subpages will be transmitted in the teletext cycle.

In sequence: This is the normal mode where all pages are transmitted in sequence in the teletext cycle.

Out of sequence (hidden): Pages with subpages will be transmitted out of sequence with the out of sequence header bit set. This means that the header of these pages will not be visible when the teletext decoder is searching for the pages.

Out of sequence: Pages with subpages will be transmitted out of sequence but the out of sequence header bit will not be set. This means that the header of these pages will be visible when the teletext decoder is searching for the pages.

Combiner mode: This mode should only be selected if a teletext combiner is present on the output of the Teletext Data Generator.

Subpage Numbering

SUBPAGES

Information

Here you can define how subpage numbering will occur and on which position on the teletext page. Please note that you can override the position of the subpage numbering by writing into the teletext page the following sequence of control characters: <CONCEAL><CONCEAL>SN<TEXT COLOUR>

Decrementing Counter

COUNTER

Information

Here you can define whether the page counter should be incrementing or decrementing. Please note that the decrementing counter is generally better because viewers will have faster access to teletext pages.

Force Parallel Transmission

PARALLEL MODE

Information

Here you can enable the parallel transmission mode. In most cases this should be disabled. This mode is only required when teletext lines from more than one teletext data generator are present in the same VBI. In such case it is also necessary to disable the magazines which are transmitted by the other Teletext Data Generator.

Enable / Disable Magazines

MAGAZINES

Information

Here you can enable and disable magazines. Each magazine contains pages from 100 to 1FF, 200 to 2FF, …

Packet 8/31 in Spare Lines

PACKET 8/31

Information

Here you can define whether the teletext lines which can not be used for transmission of teletext pages (sometimes called spare capacity or header repetition) should be filled with packet 8/31 or they should be transmitted with empty content.

Packet X/31 streams

PACKET X/31 STREAMS

Information

Here you can define enable the four available X/31 streams which are used for Data Broadcasting. You can also configure the maximum number of packets which are transmitted within 2 seconds, the guaranteed number of packets per 2 seconds and the maximum packets allowed per field.

Not Archived Pages

ARCHIVE

Information

Here you can define which pages should not be stored in the historic archive. To exclude all pages simply define the interval from 100 to 8FF.

Alarm Page

ALARM PAGE

Information

Here you can define the alarm page. This page will always be transmitted with the subcode that corresponds to the current time.

Serial Ports

The following data can be set for each COM port:

Port type	Description
GPI input	**The port is not used or it is only used as a GPI input port**
Console	**A teletext editing terminal is connected to this port. All commands are available to any user of this terminal and no registration is needed (and also not possible).**
Normal	**A teletext editing terminal is connected to this port. All users of this terminal must register to be able to issue commands to the Data Generator.**
Dialup In/Out Modem	**A dialup modem is connected to this port. Only users that are allowed to access the system over modem will be allowed to register on this port. See the command USR for details. All teletext protocols are automatically recognised on this port.**

Port speed

Select the speed that should be used at the port. Please note that you should select 38400 bit/s when you connect a modem that supports transmission speeds of 14400 bit/s or higher.

When Hold is enabled and a modem is connected to the port, the speed between the modem and the serial port is kept at constant speed. Otherwise the port speed changes according to the speed that is reported by modem. Please consult the documentation for your modem to determine which mode is applicable for your modem.

Protocol

The protocol that should be used on the serial port must be selected for all ports except for dialup modem connections, where the protocol is recognized automatically. All ports that will be used for connection of FAB equipment must use the protocol FAB. If you will connect other equipment select one of the following protocols: OBC, ASTET, ASTET25, R24 (Row 24). The "Simple ASCII" protocol can be used for sending commands to the data generator with a terminal software like HyperTerminal and receiving a reply without the possibility to send or receive the complete teletext page. The command must be terminated by a #13 and the reply will also be terminated by #13. When the "Simple ASCII" protocol is selected then the port also accepts all 4 available GPI inputs at the same time.

ISDN

Information

ISDN (CAPI)

This enables support for ISDN cards with CAPI 1.1/2.0 drivers. Select the option you wish to enable:

Option	Description
Enable CAPI	When this is disabled the ISDN interface will not be initialised and can not be used.
V.110 Protocol	Enables the use of the protocol V.110.
Analogue Modem	Enables the use of the analogue modem if this is supported by the installed ISDN card and also by the CAPI 1.1/2.0 driver.

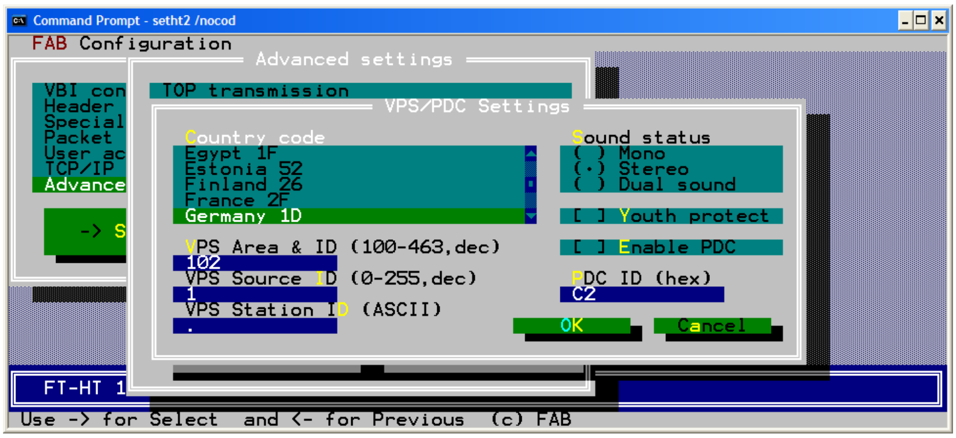
Enter the MSN (Multiple Subscriber Number) that will be used to answer incoming calls. If you enter * then all incoming calls will be answered independent of the MSN. We propose to use MSN * always.

VPS/PDC SETTINGS

Information

VPS/PDC Settings

Here you can define the content of the VPS line and also of the PDC packet.



```
VPS/PDC Settings

Country code                          Sound status
Egypt 1F                              ( ) Mono
Estonia 52                            (·) Stereo
Finland 26                            ( ) Dual sound
France 2F
Germany 1D                            [ ] Youth protect

VPS Area & ID (100-463,dec)           [ ] Enable PDC
102
VPS Source ID (0-255,dec)             PDC ID (hex)
1                                     C2
VPS Station ID (ASCII)
.
```

Here you should enter the VPS data that will be transmitted in VBI line 16. You can find out which VPS code has to be entered in this document:

http://www.ebu.ch/CMSimages/en/tec_info_tr231-2006_tcm6-41792.pdf

The following example shows how to enter the correct data for PTV Swiss on page 29:

VPS Code 496 (Switzerland):

Country code: Switzerland 24 (the first digit /2/ is not specified in the EBU document because it is ignored by most receivers).

PDC ID: 96 (the last two digits of the VPS-Code from the EBU document).

VPS Area & ID will be calculated automatically.

VPS Source ID: You should enter a different number here for every data generator that you have. The first one should have 1, the second one 2, …

VPS Station ID: Channel name of up to 8 characters, i.e. MTVSWISS (this name is generally not shown by any receiver).

For Austria you would enter the country code “Austria 1A” and for Germany the country code “Germany 1D”.

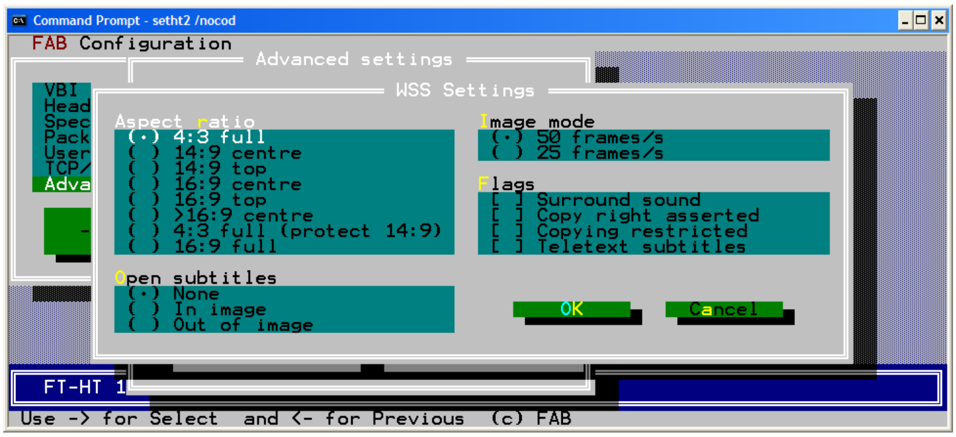
The VPS/PDC settings are stored and can be modified while the system is running by using the commands CFG VPS and CFG PDC which are described later below in this manual in the chapter “Transmission of PDC Data”.

WSS Settings

Here you can define the content of the WSS (Wide Screen Signaling) line.

WSS SETTINGS

Information

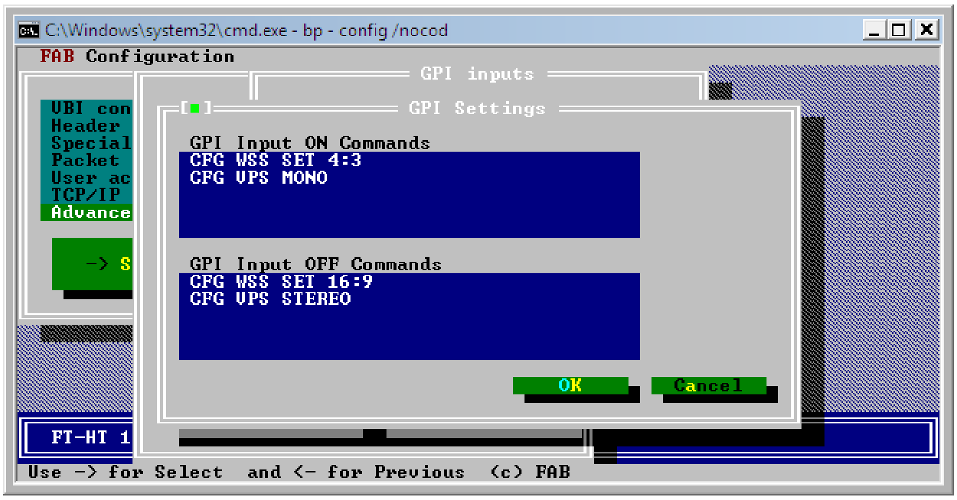


```
FAB Configuration
                  Advanced settings
                       WSS Settings
Aspect ratio                          Image mode
 (•) 4:3 full                          (•) 50 frames/s
 ( ) 14:9 centre                       ( ) 25 frames/s
 ( ) 14:9 top
 ( ) 16:9 centre                      Flags
 ( ) 16:9 top                          [ ] Surround sound
 ( ) >16:9 centre                      [ ] Copy right asserted
 ( ) 4:3 full (protect 14:9)           [ ] Copying restricted
 ( ) 16:9 full                         [ ] Teletext subtitles

Open subtitles
 (•) None                                 OK        Cancel
 ( ) In image
 ( ) Out of image

FT-HT 1
Use -> for Select  and <- for Previous  (c) FAB
```

The WSS settings are stored and can be modified while the system is running by using the command CFG WSS which is described later below in this manual in the chapter “Insertion of WSS Data”.

GPI inputs

Here you can define the action that will be performed when the GPI input status changes. You can use 4 different GPI inputs on serial port COM1 by using the pins CD, RI, DSR and CTS as input and DTR as output. You will find details on hardware connections in the chapter GPI Input Connection further above in this manual.



```
GPI Input ON Commands
CFG WSS SET 4:3
CFG VPS MONO

GPI Input OFF Commands
CFG WSS SET 16:9
CFG VPS STEREO
```

For every GPI input you can define commands that will be executed when the input is ON (high) or OFF (low). The commands will only be executed when the status changes from OFF (low) to ON (high) or from ON (high) to OFF (low).

Generally the GPI input is used to change the insertion of WSS, VPS and PDC and therefore the commands CFG WSS, CFG VPS and CFG PDC will be used. You can however use any command that is supported by the Data Generator.

Chapter

3

Transmission of Teletext

Description of Transmission Modes of the FAB Teletext Data Generator FT-DGS 4

Teletext Transmission Program

TELETEXT PROGRAM

🗁 Information

When the Teletext Data Generator is switched on it automatically starts executing the Teletext Transmission program. At the beginning all pages that are on the hard disk are checked and all pages that have been transmitted when the Teletext Transmission program was stopped are put into transmission again. When the checking of pages is finished, the Data Generator is ready to execute commands from the terminals.

To stop the Teletext Transmission program type QUIT, to enter Utilities type UTIL.

A Teletext Editing Terminal is implemented in the transmission software. Type TERM to start the Editing Terminal. Consult the chapter "Editing Terminal" for details on using the editing terminal software.

If you are using Stand By system and you stop it of any reason, always copy all the data from the Main system to the Stand By system to update its database after you restart the Stand By.

Utilities

Utilities is a part of the Teletext Transmission program where you can change some settings like system time and date.

To return to the main part of the Teletext Transmission program press 0.

When entering the Utilities part of the Teletext Transmission program please note that at some stages (for example when entering new time or date) communication with the editing terminals is not possible. That means that no command can be executed from an editing terminal.

However the communication with the subtitle generator is still operational if the film already started (the subtitle generator has already initialized all pages required for subtitle transmission). So do not enter Utilities before a film started because the subtitle generator will not be able to initialize the pages for subtitles and the subtitles will not be transmitted.

Set System Time

Selecting this option (by pressing 1) you can change the system time. Do not use this option to change from or to DST time. To do this use ”Change to Winter (Summer) Time” option or the DST command from an editing terminal. The DST command is very useful as it can be used in time commands (see command TMC for details). So to change to DST time specify the DST ON command as a time command to be executed at 02:00.

Reset seconds to 00

By pressing 2 the seconds are reset to 0. You can use this for easier setting of the clock by synchronising it 0 seconds of any other clock.

Change to Winter (Summer) Time

Use this option to change to or from DST (Daylight Saving) time. Do not move the time for one hour back or forth manually.

Set System Date

Use this option to set the system date.

Return to Normal Operation

Using this option the Teletext Transmission program is returned to normal operation. After that all terminals can start issuing commands to the Teletext Data Generator.

Increment Seconds

By pressing + the seconds of the system time are incremented.

Decrement Seconds

By pressing - the seconds of the system time are decremented.

Transmission Modes

Many different transmission modes can be selected in the Configuration Program. This is a brief description of possible settings and other transmission features of the FAB Teletext Data Generator.

For the teletext transmission fixed format teletext is used (EBU system B).

Rotating pages transmission

Following transmission modes for transmission of rotating pages are available:

In Sequence

When this mode of transmission is selected all pages will be transmitted in sequence. When a rotating page would have to be transmitted, the transmission depends on the Display Time set for that page. The page will be rotated only if the time difference from the last transmission of the page is greater than the display time selected for that page.

Out of Sequence

In this mode of transmission all rotating pages will be rotated exactly on the display times selected for a page (see Page Parameters of the Editing Terminal or TIM command). The headers of rotating pages transmitted out of sequence will not have the interrupted sequence bit C9 set.

Out of Sequence Hidden

This mode is identical to the Out of Sequence mode. The only difference is that the headers of rotating pages transmitted out of sequence will have the interrupted sequence bit C9 set.

Subcodes

Non-rotating pages have subcode 0000, rotating pages have subcodes identical to current subpage number (decimal coding). There is an alarm clock page that has the subcode set to the current time.

Character Sets

In addition to characters from national options some characters are transmitted in packets X/26. Up to 15 packets X/26 may be transmitted on one page. No other functions of packets X/26 are used. All the data in packets X/26 is hamming coded as 13 groups of 3 bytes.

For subtitles the whole ISO 6937/2 character repertoire is used and transmitted through packets X/26.

Serial Attributes

In addition to the attributes defined at Level 1 Teletext the black alphanumerics (code:0) and black graphics (code:10 hex) attributes from Level 2.5 are used. In Level 2.5 transmission also Double Width (0E hex) and Double Size (0F hex) are used.

Packet 8/30

Format 1 of packet 8/30 is transmitted every second. MJD and UTC data is present in this packet. The Network Identification code in this packet may be used to identify the transmission of teletext of your TV station.

TOP

The Basic TOP, Multipage TOP and Additional TOP tables are transmitted when TOP transmission is enabled, according to the specification of IRT Munich.

Chapter

4

Operation

Operation of the FAB Teletext Data Generator FT-DGS 4

The Teletext System

FAB TELETEXT SYSTEM

🗀 Information

The FAB Teletext System consists of the Data Generator and Teletext Editing Terminals. The terminals can communicate with the Data Generator where pages are stored to a built-in hard disk and can be transmitted as selected.

The Editing terminals can issue commands which the Data Generator has to execute. When a command is executed, the confirmation appears on the terminal. When the command is not executed, an error message appears. This way of operation is not only used by the FAB Teletext system bur also by some of the most powerful database systems like SQL.

The pages on the hard disk are stored in the same way as they are transmitted. They are numbered from 000 to 999, but only pages from 100 to 899 can be transmitted. The other 200 pages can only be used for storing of pages. In addition there are pages available which are defined in the teletext specification as hexadecimal pages. These pages have hexadecimal page numbers from 10A to 1FF, 20A to 2FF up to 80A to 8FF.

Each page can consist of up to 8000 subpages. The subpages are rotating automatically when they are transmitted. Also rotating pages are automatically numbered in the right upper corner when transmitted. Every rotating page can only be transmitted with all of its subpages. It is not possible to transmit only some subpages of a rotating page (See GET, PUT, INS and RUN commands).

All pages from 000 to 999 can be named by the NAM command. Every name can consist of up to 12 characters and is automatically used in transmission of the TOP system.

Pages can also be stored under text names in a directory structure by using the PUT command. It is also possible to access pages that are transmitted under a text name. See the LNK command for details.

All pages that are transmitted are automatically stored in a special archive when their transmission is invoked. The archive provides storage for as many days as there is space on the hard disk. The oldest archive will be deleted only when there is no more space for the archive of the current day, Together with the page additional information is also stored. See the ARC command for more information.

When a Stand-by system is connected to the Data Generator all commands that are executed on the main system are also executed on the Stand-by system so that when the main system fails the transmission can automatically be continued from the Stand-by system.

The time commands can be used for automatic execution of commands at specific times on specific days. See the command TMC for more information.

Each user of the system has to register when he starts using the Data Generator. Since each user can have a different priority, he can only use the commands corresponding to his priority. See REG and LOG commands for more information.

Important Commands

This section lists some most important commands of the FAB Teletext Data Generator. You will find a detailed description of each command in the Commands section of this manual.

Commands for daily use

Command	Description
GET	Reads a page from the database
GER	Reads a page from transmission memory
PUT	Stores a page into the database
INS	Stores a page into the database and puts the page into transmission
RUN	Puts a page which is stored in the database into transmission
STO	Stops transmission of a page.
REG	Enables a user to login into the system
LOG	Logs the user out of the system
DIR	Displays a list of pages that are stored in the database
DRI	Displays a list of pages that are stored in the directory structure of the database
CLR	Returns an empty teletext page for further editing.
DEL	Deletes a page from the database and stops its transmission
COP	Copies a page from the database to another place in the database
MOV	Moves a page from the database to another place in the database
ARC	Enables searching for a page in the archive of transmitted pages

Other Page Handling Commands

Command	Description
TIM	**Defines the display time for each subpage of a rotating page**
TRU	**Truncates a rotating page at a specified subpage**
APP	**Appends some rows of a page to a page in the database**
SAV	**Stores a page under a temporary name**
RTR	**Retrieves a temporary page and deletes it**
SDR	**Shows the directory of temporary pages**
MKD	**Creates a new directory in the directory structure**
CHD	**Changes the current directory**
RMD	**Removes a directory**
DRU	**Updates the access rights for a directory**
CPL	**Copies Links (FASTEXT) information to another page**
INF	**Displays all available information about a page**
EXE	**Executes all commands that are stored on a page**
TMC	**Defines commands that should be executed automatically**
FAS	**Defines fast transmitted pages**
WPR	**Defines write protected pages**

User Information Commands

USER INFO COMMANDS

🗁 Information

Command	Description
UCD	Displays the username of a user with a usercode
SHO	Displays a list of users that are currently logged in
PAS	Enables a user to change his password
USR	Enables management of users (creation, deletion)

TOP and Name Commands

TOP COMMANDS

🗁 Information

Command	Description
NAM	Defines the name of a page
TOP	Displays or defines the TOP structure
DAC	Defines TOP Direct Access Pages
VPT	Defines VPT pages

System Commands

SYSTEM COMMANDS

🗁 Information

Command	Description
CLK	Displays the time and date
SYS	Displays system status information
MEM	Displays available memory
TST	Displays a test page
SMS	Sends an E-Mail message
RMS	Reads an E-Mail message

PRIORITIES

🗀 Information

Priorities

Each user can have a different priority and can use different commands. Depending on the commands that the user should be able to use the following priorities are available:

Priority	Description
9	**This is a SYSOP priority. It allows changing system parameters (CFG), passwords (USR)...**
1	**The highest priority for a normal user. It allows using all commands except for the ones that could change system configuration (USR, CFG, ...).**
2	**This priority allows using most commands and should normally be assigned to users accessing the system over the modem.**
4	**Is the lowest priority for a normal user. It only allows readinf and writing pages to the system (GET, PUT), but does not allow changing anything in the transmission (RUN, STO, DEL).**
5	**This priority is like priority 6, but some commands are not allowed (like SMS).**
6	**This priority is similar to priority 1, but some commands are not allowed (like TMC).**

COMMANDS IN PRIORITIES

🗀 Information

Commands in Priorities

The following commands are available for different priorities:

Priority	Allowed commands
Console	all except **REG LOG CFG USR SCK SDT DST**
1	all except **CFG USR TDC RBT RST DRC DST**
2	**INS RUN GET PUT STO APP DEL DIR TIM TST SYS SHO REG LOG HLP CLK CLR SMS RMS PAS TRU DRI DRU CHD MKD RMD**
4	**GET PUT RTR SAV SDR COP DIR TIM TST SYS SHO REG LOG HLP CLK CLR RMS PAS DRI DRU CHD MKD RMD CPL**
5	**INS RUN GET PUT STO APP DEL MOV DIR TIM TST SYS SHO RTR SAV SDR COP ARC UCD REG LOG HLP CLK CLR RMS PAS TRU DRI DRU CHD MKD RMD CPL**
6	**INS RUN GET PUT STO APP DEL MOV DIR TIM TST SYS SHO RTR SAV SDR COP ARC UCD REG LOG HLP CLK CLR RMS SMS NAM PAS MOV TRU DRI DRU CHD MKD RMD CPL**
9	**USR HUP SCK SDT HLP GET DIR TST SYS SHO ARC UCD TMC MEM DRC EXE FAS DAC TOP REG LOG CLK CLR SMS RMS PAS CFG TDC RST RBT UPD DRI DRU CHD MKD RMD**

First Steps

FIRST STEPS

Information

If not already you should first get familiar with the concepts of teletext. This can be easily done by simply switching on the teletext decoder in a TV set and browsing through teletext pages on one of the available channels that are already transmitting teletext. If you have not been using teletext on a TV set as a viewer by now it is strongly recommended that you do so before getting familiar with the Teletext Transmission System.

As already described the commands must be executed on an editing terminal. For a quick start make sure the editing terminal is connected correctly to the Teletext Data Generator and start the teletext editing terminal (i.e. FT-ETT 1).

The screen of the teletext editing terminal should display a teletext page (the page can also be blank) that consists of 24 lines and 40 columns. The line on the bottom is the command line where you can type in commands.

READ A PAGE

Test by yourself

Type: GET 100.01 [RETURN]

If everything is correct after a few moments a teletext page should be displayed on the screen of the editing terminal. If nothing happens then wait for 90 seconds. If TIMEOUT is displayed then the connection to the Teletext Data Generator is not correct. Check the cable and also all communication parameters (speed, port) in the configuration parts of the editing terminal and also of the Teletext Data Generator.

You have just got familiar with the most frequently used command of the FAB Teletext Data Generator. The command GET retrieves the specified page from the disk of the Teletext Data Generator.

The pages in teletext can consist of subpages. The subpages are rotated automatically when they are transmitted. When using commands the page number of any page must be specified with 3 digits (i.e. 152). If the page consists of more than 1 subpage, then the subpage that should be affected by the command must be as well specified (i.e. 152.03 for the third subpage of page 152).

To be able to change anything (write access) on the FAB Teletext Data Generator you require a username and a password. The creation of passwords is described in the installation manual. Please obtain an username and a password before continuing. To register on the Teletext Data Generator you should use the command REG:

LOGIN

Test by yourself

Type: REG username,password [RETURN]

If the OK messages REGISTERED appears that means that your password is OK and you can now use the Teletext Data Generator.

ACCESS INFORMATION

Test by yourself

Type: ACC [RETURN]

Your access information will be displayed, which means your rights when accessing the system, like the lowest and highest page that can be changed. Now try to change something on the teletext page that is on the screen of the teletext editing terminal (consult the manual of the editing terminal for details).

Return back to command line and type the following command:

INSERT A PAGE

Test by yourself

Type: INS 133 [RETURN]

If no error message is displayed (errors are displayed on the right side of the command line in red or yellow colour, OK messages are in cyan colour) the page you have just modified on the screen of the editing terminal has been transferred to the Teletext Data Generator and is now transmitted with the page number 133.

Now try to change something on the page again.

Type: INS 133A [RETURN]

If no error message appears the page on the screen of the editing terminal has now been appended to the page 133. This means a new subpage has been created and the page is now transmitted as subpage 2 of the page 133. You should try to check the result of the commands on a TV set with a teletext decoder.

STOP A PAGE

Test by yourself

Type: STO 133 [RETURN]

The page 133 is not transmitted any more after this command is executed.

However the page is still available on the Teletext Data Generator as it has only been stopped but not also deleted.

DIRECTORY OF PAGES

Test by yourself

Type: DIR 100 [RETURN]

The list of pages that are available on the Teletext Data Generator should now be displayed. The page 133 should be displayed in yellow colour which means that the page exists on the disk of the Teletext Data Generator but it is not in transmission. The pages that are displayed in green colour are currently transmitted and also stored on the disk.

Type: GET 133.01 [RETURN]

The first subpage of the page 133 should now be displayed on the screen of the teletext editing terminal. As you can see, the page 133 is still available but if you select the page number 133 on the teletext decoder of the TV set, you will not be able to find it.

RUN A PAGE

Test by yourself

Type: RUN 133 [RETURN]

The 2 subpages of the page 133 should now be put back into transmission.

DELETE A PAGE

Test by yourself

Type: DEL 133A [RETURN]

The page 133 with all of its subpages is deleted and the page is also removed from transmission.

Type: GET 133 [RETURN]

An error message should now be displayed meaning that the page 133 is not available on the disk as somebody has erased it or it was not created yet.

STORE A PAGE

🖳 Test by yourself

Type: PUT 133 [RETURN]

The page that is on the screen of the editing terminal is now stored on the disk of the Teletext Data Generator. Use the command DIR to check that the page 133 is displayed in yellow.

Now erase the page that is on the screen of the editing terminal. This is done by issuing the command CLR. A blank page should be displayed. You should always start the creation of a new page by issuing the command CLR. Of course if you only wish to change some data of an existing page you should use the command GET to get it on the screen, change the data and use the command INS or PUT to transfer it back to the Teletext Data Generator.

Be careful: never start creating a new page without previously issuing the command CLR or GET !

Now clear a page by using the command CLR. At the beginning of the line 1 (this is the second line from the top of the screen, see the co-ordinates that are displayed on the screen) type: This is name

DEFINE PAGE NAME

🖳 Test by yourself

Type: NAM 133R [RETURN]

The page 133 will now get a new name. Use the command DIR to see the name.

The specified name will also be used (automatically) in transmission of the TOP system.

DISPLAY HELP PAGE

🖳 Test by yourself

Type: HLP [RETURN]

The list of commands that are available on the FAB Teletext Data Generator will be displayed.

Type: HLP NAM [RETURN]

This will display the details about the command NAM. This way you can get detailed help on most of the commands without having to consult the manual.

This was only a short description of some of the most important commands of the FAB Teletext Data Generator. You should in any case browse through the description of the rest of the commands. There are also other interesting commands available that could make your work easier and faster.

Chapter 5

Command Reference

The Commands of the FAB Teletext Data Generator FT-DGS 4

COMMAND REFERENCE

🗁 Information

This chapter describes all commands which are supported by the FAB Teletext Data Generator. For each command the correct syntax and if applicable also some examples are given.

GET

The command GET is used to get a page from the Data Generator´s hard disk.

SYNTAX

✎ Available syntax.

GET XXX	(Gets page XXX)
GET XXX.XX	(Gets subpage XX of the page XXX)
GET XXXF	(Gets the first subpage of page XXX)
GET XXXL	(Gets the last subpage of page XXX)
GET XXXN	(Gets the first subpage of page XXX or the next existing page following page XXX)
GET XXXP	(Gets the first subpage of page XXX or the first existing page preceding page XXX)
GET	(Gets the next available page on the Data Generator´s hard disk)
GET .	(Gets the first page preceding the last page that has been got by GET)
GET +	(Gets the first subpage of the first following page on the Data Generator´s hard disk)
GET -	(Gets the first subpage of the first preceding page on the Data Generator´s hard disk)
GET name	(Gets the page with the name name. The name can also contain the path (directory) of the page. See section File System for details)

EXAMPLES

Test by yourself

GET 176	(Gets page 176)
GET 342.33	(Gets subpage 33 of the page 342)
GET 243F	(Gets the first subpage of page 243)
GET PETER	(Gets the page with name PETER from current directory) GET /USER2/PETER (Gets the page with name PETER from directory /USER2)

GER

The command GER is used to read a page directly from transmission memory of the Teletext Data Generator. This way all pages that are currently transmitted by the Teletext Data Generator can be read including the pages that are not necessary stored on the hard disk.

SYNTAX

Available Syntax.

GER xxx	(Gets the first subpage of page XXX)
GER xxx.xx	(Gets subpage XX of the page XXX)
GER xxxF	(Gets the first subpage of page XXX)
GER xxxL	(Gets the last subpage of page XXX)
GER xxxN	(Gets the first subpage of page XXX or the next existing page following page XXX)
GER xxxP	(Gets the first subpage of page XXX or the first existing page preceding page XXX)
GER	(Gets the next available page in the Data Generator´s transmission memory)
GER .	(Gets the first page preceding the last page that has been got by GER)
GER +	(Gets the first subpage of the first following page in the Data Generator´s transmission memory)
GER -	(Gets the first subpage of the first preceding page in the Data Generator´s transmission memory)

PUT

The command PUT is used to store a page to the Data Generator´s hard disk.

SYNTAX

Available syntax.

PUT XXX	(Stores the page on the screen as page XXX, overwriting the previous page XXX)
PUT XXXF	(Stores the page on the screen as first subpage of page XXX)
PUT XXXL	(Stores the page on the screen as last subpage of page XXX)
PUT XXXa	(Appends the page on the screen to page XXX - if page XXX has 2 subpages, the page will be stored as subpage 3)
PUT XXX.XX	(Stores the page on the screen as subpage XX of the page XXX, overwriting the previous subpage XX of the page XXX. XX must not be higher than the number of subpages of the specified page plus one)
PUT XXX.Xxi	(Inserts the page on the screen in the page XXX - the page will be stored as subpage XX, all following subpages, including XX, will be moved one up)
PUT name	(Stores the page on the screen as the page with name name. The name can also contain the path (directory) of the page. See section File System for details)

EXAMPLES

Test by yourself

PUT 154	(Stores the page on the screen as page 154)
PUT 128.01I	(Stores the page on the screen as subpage 01 of the page 128. All subpages of the page 128 will be moved one up - subpage 1 will become subpage 2,...)
PUT PETER	(Stores the page on the screen as page with name PETER in the current directory)
PUT /USER2/PETER	(Stores the page on the screen as page with name PETER in the directory /USER2)

RUN

The command RUN is used to start transmitting a page (including all of its subpages) that is stored on the Data Generator´s hard disk. It is not possible to transmit only some subpages of a page.

SYNTAX

✎ Available syntax.

RUN XXX	(Starts transmitting page XXX and all of its subpages)

EXAMPLES

💻 Test by yourself

RUN 256	(Starts transmitting page 256 and all of its subpages)

STO

The command STO is used to stop transmitting a page (including all of ist subpages).

SYNTAX

✎ Available syntax.

STO XXX	(Stops transmitting the page XXX and all of its subpages)

EXAMPLES

💻 Test by yourself

STO 356	(Stops transmitting the page 356 and all of its subpages)

INS

The command INS is used to store a page on the Data Generator´s hard disk and to start transmitting the page immediately after that. It is the same as executing commands PUT and RUN subsequently.

SYNTAX

Available syntax.

INS XXX	(Same as PUT XXX and RUN XXX)
INS XXXa	(Same as PUT XXXa and RUN XXX)
INS XXX.XX	(Same as PUT XXX.XX and RUN XXX)
INS XXX.Xxi	(Same as PUT XXX.XXi and RUN XXX)

EXAMPLES

Test by yourself

INS 235A	(Appends the page on the screen to the page 235 and starts transmitting the page 235)
INS 166.33	(Stores the page on the screen as subpage 33 of the page 166 and starts transmitting the page 166)
INS 303.02I	(Inserts subpage 2 of page 303 before previous subpage 2, which becomes now subpage 3, moving all following one number higher and starts transmitting the complete page 303)

APP

The command APP (append) can be used to append only few rows to existing page. All the rows present on the editor screen (even if they only contain control characters for colours without any characters and seem to be empty) will be written to the existing page. Only the rows which contain only spaces (#32) are taken from the old page. This way the transmission time from terminal to generator is shorter if only few rows have changed. Also the characters in packets X/26 (Æ,Ø) are taken from appropriate pages for the correct rows.

With command APP it is not possible to erase rows from page. The only way to do this is to transmit rows which contain only control characters but no text. When using FAB Teletext Editing Terminal (FT-ETT 1) it is necessary to make a row which has the "Start Box" as the last character in the line as all other rows without text are eliminated. Command APP requires that the old page and the appending page have the same character set (marked in the top right corner of editor screen). Otherwise an error message is returned. If the old page does not exist an empty page will be used instead.

Syntax for APP is the same as for INS command and also the functionality is the same in respect of transmission and handling of pages.

SYNTAX

Available syntax.

APP XXX	(Appends new rows to page XXX and executes RUN XXX)
APP XXX.XX	(Appends new rows to page XXX.XX and executes RUN XXX)

EXAMPLES

Test by yourself

APP 235A	(Appends the page on the screen to the page 235 and starts transmitting the page 235)
APP 166.33	(Appends new lines from the screen to subpage 33 of the page 166 and starts transmitting the page 166)

TIM

The command TIM is used to define the display time of a subpage when the page is rotating. To put the actual time into effect use the RUN command.

SYNTAX

Available syntax.

TIM XXX TT (Defines the display time of all subpages of page XXX to be TT seconds)

TIM XXX.XX TT (Defines the display time of page XXX.XX to be TT seconds)

EXAMPLES

Test by yourself

TIM 100.01 06 (Defines the display time of the page 100.01 to be 6 seconds)

NOTES

Information

The effect of the display time depends on the "Rotating page transmission mode", which is described in the Installation manual and on the contents of the fast rotating pages list (see also FAS command).

TRU

This command will truncate and if the page was transmitted when the command is executed the page will also be RUN.

SYNTAX

Available syntax.

TRU XXX.YY Erases all subpages following subpage YY of the page XXX and runs the page XXX if it was on air before.

TRU XXX.YYR Erases all subpages following subpage YY of the page XXX and runs the page XXX.

TRU XXX.YYS Erases all subpages following subpage YY of the page XXX and stops transmission of the page XXX.

EXAMPLES

Test by yourself

TRU 367.08 Erases all subpages following subpage 8 and runs the page 367 if it was on air before. Subpage 8 will not be erased.

DEL

The command DEL is used to delete a page from the Data Generator´s hard disk. When the complete page (including all subpages) is deleted, the page is not transmitted any more (like executing STO command). When only one subpage is deleted, the deleted subpage is not transmitted any more (like executing RUN command after deleting a subpage).

SYNTAX

Available syntax.

DEL XXX	(Deletes page XXX. The page must not consist of more than one subpage (=not rotating). After that the page is also not transmitted any more)
DEL XXXa	(Deletes all subpages of page XXX. The page is also not transmitted any more)
DEL XXX.XX	(Deletes the subpage XX of the page XXX. The subpage XX is also not transmitted any more)
DEL name	(Deletes page with the name name. The name can also contain the path (directory) of the page. See section File System for details)

EXAMPLES

Test by yourself

DEL 109A	(Deletes all subpages of the page 109 and stops transmitting the page 109)
DEL 342.12	(Deletes subpage 12 of the page 342 and stops transmitting subpage 12)
DEL PETER	(Deletes page with name PETER in current directory)
DEL /USER2/PETER	(Deletes the page with name PETER in directory /USER2)

COP

The command COP is used to copy a page or a subpage to another page.

SYNTAX

Available syntax.

COP XXX YYY.YY	(Copies the page XXX (must not be rotating) to the subpage YY of the page YYY. The subpage YY will be overwritten)
COP XXX.XX YYY	(Copies the subpage XX of the page XXX to the page YYY (must not be rotating). The page YYY will be overwritten)
COP XXX YYY	(Copies the page XXX (including all of its subpages) to the page YYY. The page YYY must not exist. If the pages XXX and YYY are not rotating, the page XXX is copied to the page YYY - the page YYY is overwritten)
COP XXX YYYa	(Appends the page XXX (including all of its subpages) to the page YYY)
COP XXX YYYd	(Deletes the page YYY and copies the page XXX (including all of its subpages) to the page YYY)
COP XXX YYY.Yyi	(Inserts the page XXX (must not be rotating) into the page YYY as subpage YY. All following subpages (including YY) will be moved one up)
COP XXX.XX YYYa	(Appends the page XXX.XX to the page YYY)
COP XXX.XX YYYd	(Deletes the page YYY and copies the page XXX.XX to the page YYY)
COP XXX.XX YYY.YY	(Copies the page XXX.XX to the page YYY.YY. The page YYY.YY will be overwritten)
COP XXX.XX YYY.Yyi	(Inserts the page XXX.XX into the page YYY as subpage YY. All following pages of the page YYY (including YY) are moved up)
COP XXX YYY ZZZ	Copies all pages (including subpages) starting with page number XXX and ending with page number YYY to the pages starting with page number ZZZ. All pages that are following ZZZ will be overwritten by the moved pages! If one of the source pages does not exist then the destination page is deleted!

NOTES

Information

You can specify an additional parameter R or S at the end of each COP command. When you specify R all destination pages from the COP command will be put into transmission (see RUN command). When you specify S all destination pages from the COP command will be put removed from transmission (see STO command).

For easier remembering of all different COP commands, you should understand how they are organised. A rotating page can not be overwritten without specifying the D parameter. To append one or all subpages of a page use the A parameter. To insert a single subpage of a page use the I parameter.

EXAMPLES

Test by yourself

COP 100.01 150.07	Copies subpage 1 of page 100 to subpage 7 of page 150. Note that page 150 should have at least 6 subpages.
COP 170 247	Copies all subpages of page 170 to page 247. Page 247 must not exist.
COP 170 247A	Appends all subpages of page 170 to page 247.
COP 170 247D	Deletes page 247 and copies all subpage of page 170 to page 247.
COP 567.23 422.11I	Inserts subpage 23 of page 567 to page 422 as subpage 11. All subpages from 11 on of the page 422 will be moved one number up.
COP 199.03 223A	Appends subpage 3 of page 199 to page 223.
COP 237 765.13I	Inserts page 237 (must consist of one subpage only) as subpage 13 of page 765. All subpages starting with subpage 13 and higher on the page 765 will be moved one up.
COP 235 256 754	Copies pages from 235 to 256 to pages starting with 754. This means that page 235 will be copied to page 754, page 236 to 755... and page 256 to page 775. If any of the pages from 754 to 775 was on air before moving it will removed from transmission. If a page between 235 and 256 does not exist then the corresponding destination page will be erased.
COP 235 256 754R	Same as above but all pages from from 754 to 775 will be put on air (RUN).
COP 235 256 754S	Same as above but all pages from from 754 to 775 will be removed from transmission (RUN).

CPL

The command CPL is used to copy link information (FASTEXT data - packets X/24 and X/27) from a page or a subpage to another page.

SYNTAX

✎ Available syntax.

CPL XXX YYY	(Copies links from the page XXX (must not be rotating) to all subpages of page YYY)
CPL XXX.XX YYY	(Copies links from the subpage XX of the page XXX to all subpages of the page YYY)
CPL XXX YYYa	(Copies the links from all subpages of page XXX to the corresponding subpages of page YYY. The page XXX and YYY must have the same number of subpages)
CPL XXX YYY.YY	(Copies links from the page XXX (must not be rotating) to subpage YY of page YYY)
CPL XXX.XX YYY.YY	(Copies links from the subpage XX of page XXX to subpage YY of page YYY)

EXAMPLES

💻 Test by yourself

CPL 100.01 150.07	Copies links from subpage 1 of page 100 to subpage 7 of page 150. Note that both subpages have to exist.
CPL 170 247	Copies links from page 170.01 to all subpages of page 247. Page 247 must exist and page 170 must not be rotating page.
CPL 170 247A	Copies links from page 170.01 to page 247.01, links from 170.02 to 247.02 in the same way to all existing subpages. Note that pages 170 and 247 must have the same number of subpages.

MOV

This command is used for moving pages. This is completely the same as copying pages using the command COP except that the source pages are deleted after they are copied. For example moving the page 139 to page 155 by using the command MOV 139 155 will copy all subpages of the page 139 to the page 155 and if the copying process is successful it will erase all subpages of the page 139. Blocks of pages (i.e. pages from 133 to 157) can also be moved in addition to all possibilities of the COP command. All source pages that were on air before they were copied (moved) will be run (put on air) again after they are moved automatically. The pages that were not on air before they were moved will not be put on air after they are moved. To force all pages that are moved to be put on air simply specify the parameter R at the end of the MOV command.

SYNTAX

✎ Available syntax.

Each syntax that is used at the COP command is also allowed at the MOV command. Instead of COP just type MOV. To RUN all pages that are moved specify the parameter R at the end of command. To STOP all pages that are moved specify the parameter S at the end of command.

EXAMPLES

💻 Test by yourself

MOV 245.03 144.02 Moves subpage 3 of page 245 to subpage 2 of page 144. If the subpage 2 of page 144 exists it will be overwritten. Subpage 3 of page 245 will be deleted and page 245 will be RUN. Page 144 will not be RUN.

MOV 245.03 144.02IR Inserts subpage 3 of the page 245 as subpage 2 into the page 144. Subpage 3 of the page 245 will be deleted and page 245 will be RUN. Page 144 will also be run because of the parameter R.

MOV 235 256 754 Moves pages from 235 to 256 to pages starting with 754. This means that page 235 will be moved to page 754, page 236 to 755... and page 256 to page 775. Be careful because pages from 754 to 775 will be erased when the source pages are moved. If any of the pages from 235 to 256 was on air before moving it will be put on air again after it was moved.

MOV 235 256 754R Same as above but all pages from from 754 to 775 will be put on air (RUN).

DIR

The DIR command is used to display the directory of the pages that are stored on the disk and/or are currently transmitted. The names of the pages are also displayed.

DIR XXX (Displays all pages from XXX on that are stored on the disk and are not transmitted (in yellow) and the pages that are stored on the disk and are currently transmitted (in green). If the page in transmission is different than the page on the disk, an asterisk (*) will be displayed between the subpage number (which is the number of subpages of a page) and the page name.

SYNTAX

✎ Available syntax.

DIR XXXd	(Displays all pages from XXX on that are stored on the disk)
DIR XXXr	(Displays all pages from XXX on that are currently being transmitted)
DIR	(Continues displaying the directory of pages, if not the whole directory could be displayed on one screen)

EXAMPLES

💻 Test by yourself

DIR 100	(Displays all pages from 100 on that are stored on the disk and are not transmitted and all pages from 100 on the are currently being transmitted)
DIR	(Continues the list of pages if not the whole list could be displayed on one screen)

DRI

The DRI command is used to display the information about the current directory. See the section File System for details on directories. The information displayed contains:

Directory: /directory

Owner: Owner Usercode

Read Priorities: Priorities allowed to read directory

Write Priorities: Priorities allowed to write directory

Subdirectories: Subdirectories in the directory

Pages: Pages stored in the directory

The field Directory: displays the name of the current directory.

The field Owner: displays the usercode of the owner of the directory. The owner of the directory can either be None or any available usercode. The owner is allowed to read and write the directory independent of his priority.

The field Read Priorities: displays the priorities that are allowed to read the directory. All users having one of these priorities are allowed to read the directory. In addition priorities 0 (Console) and 9 (Sysop) are allowed to read all directories.

The field Write Priorities: displays the priorities that are allowed to write the directory. All users having one of these priorities are allowed to write the directory. In addition priorities 0 (Console) and 9 (Sysop) are allowed to write all directories.

The Subdirectories: are the subdirectories in this directory.

The Pages: are the pages that are stored in the directory.

EXAMPLES

Test by yourself

DRI	(Displays directory information)
DRI name	(Displays directory information. Only page names in the directory that are alphabetically higher or equal to name are displayed)

DRU

The command DRU is used to to change the directory access information. First the directory information must be displayed on the screen by using the command DRI.

Then change the necessary data (Owner, Read and Write Priorities) and execute DRU command.

EXAMPLES

Test by yourself

DRU	(Changes the directory information, mask created by command DRI must be on the screen)

MKD

The command MKD is used to create a subdirectory within a directory. The user must have write access to the directory where the subdirectory will be created.

SYNTAX

Available syntax.

MKD name	(Creates a subdirectory with the name name. The name of the subdirectory must not be longer than 8 characters and must not start by a digit)

EXAMPLES

Test by yourself

MKD /PETER	(Creates the directory /PETER directly in the root directory /)
MKD PETER	(In this case the result of the command is depending on the current directory. The directory PETER will be created in the current directory)

CHD

The command CHD is used to change the current directory. The user must have read access to the directory to which he wants to change to.

SYNTAX

Available syntax.

CHD dirname	(Changes the current directory to the directory with the name dirname, which must be existing)

EXAMPLES

Test by yourself

CHD /PETER	(Changes the current directory to /PETER)
CHD PETER	(In this case the result of the command is depending on the current directory. The current directory is changed to the directory /current/PETER)

RMD

The command RMD is used to remove a subdirectory. The user must have write access to the directory where the subdirectory will be removed and the directory must be empty.

SYNTAX

Available syntax.

RMD name	(Removes a subdirectory with the name name)

EXAMPLES

Test by yourself

RMD /PETER	(Removes the directory /PETER)
RMD PETER	(In this case the result of the command is depending on the current directory. The directory /current/PETER will be removed)

SAV

The command SAV is used to store a page under a user-definable name. The name can consist of up to 7 characters (only characters "A" to "Z" and "a" to "z") and can be retrieved by the RTR command. When the page is retrieved by the RTR command it is also automatically deleted from the Data Generator´s hard disk. Up to 115 pages can be saved to the Data Generator´s hard disk with the SAV command.

SYNTAX

Available syntax.

SAV name	(Saves a page with the name "name" on Data Generator´s hard disk)

EXAMPLES

Test by yourself

SAV PETER	(Saves a page with the name PETER on Data Generator´s hard disk)

RTR

The RTR command is used to retrieve a page that has been saved by the SAV command. The page is also automatically deleted from the Data Generator´s hard disk.

SYNTAX

Available syntax.

RTR name	(Retrieves a page with the name "name". The page is automatically deleted from the Data Generator´s hard disk)

EXAMPLES

Test by yourself

RTR PETER	(Retrieves a page with the name PETER. The page is also deleted from the Data Generator´s hard disk)

SDR

The SDR command is used to display the directory of pages saved by the SAV command.

SYNTAX

Available syntax.

SDR	(Lists the saved pages)

REG

The REG command is used to register into the Data Generator. Every user has to register before using any commands except on "console" terminals. Each user must have a name and a password which the system operator must write into the password list. See the Installation manual for details on updating the password list.

SYNTAX

✎ Available syntax.

REG name,password	(Registers the user with the name "name" and the password "password")

EXAMPLES

💻 Test by yourself

REG PETER,PAN	(Registers the user with the name PETER and the password PAN. After the comma (",") the password will not appear when it is typed in on FAB Teletext Editing Terminal)

LOG

The LOG command is used to log out of the Data Generator. Each user must issue the LOG command after finishing his or her work. After LOG the new user that wants to use the Data Generator must register again.

SYNTAX

✎ Available syntax.

LOG	(Logs out of the system)

SHO

The SHO command is used to show the current users of the Data Generator. The user names and user codes are displayed as well as the types of terminals.

SYNTAX

✎ Available syntax.

SHO 0	(Displays physical connection data of the terminals)
SHO	(Displays registered and unregistered users of the terminals)
SHO x	(Continues display of the users of the terminals)

UCD

The UCD command is used to display the username of the user with the specified usercode. This is especially useful when searching through the archive where only usercodes are displayed.

SYNTAX

Available syntax.

UCD X (Displays the username of the user with the usercode X)

UCD L (Displays list of usernames starting with the usercode 1)

UCD XL (Displays list of usernames starting with the usercode X)

EXAMPLES

Test by yourself

UCD 23 (Displays the name of the user with the usercode 23)

UCD 3L (Displays list of users with usercodes higher or equal 23)

NAM

The NAM command is used to specify and display the names of the pages. Only basic pages can have names (subpages can not have names). The names consist of up to 12 characters. The names that can be specified for each page will also be used for TOP transmission. So it is useful that all group and block pages have names (see also TOP command).

SYNTAX

Available syntax.

NAM XXXr	Renames the page XXX. The new name must be specified in the line 1 (this is the second line from the top of the screen, see the co-ordinates that are displayed on the screen) of the page on the screen
NAM XXXd	Deletes the name of the page XXX
NAM XXX	Displays the names of pages beginning with XXX
NAM	Continues the list of names if not all of the names could be displayed on one screen

ARC

The ARC command is used for searching through the automatic archive. All pages are stored to the archive when they are transmitted for the first time. Together with the page there is also additional data stored, the time when the first transmission of the page has been invoked, the usercode of the user who invoked the transmission, the number of the terminal he was using and the usercode of the user who stored the page to the Data Generator´s hard disk.

The archive is storing pages for at least last 7 days (including today). If a page is being transmitted and has not been stored to the archive for 7 days already (has not been changed for 7 days), it will automatically be stored to the archive on midnight. This way all the pages that are transmitted are stored to the archive once a week even if they are never changed (index pages,...).

SYNTAX

✎ Available syntax.

ARC DIR	(Displays the archive directory for the current month)
ARC DIR XX	(Displays the archive directory for the month X (01-12))
ARC XXXdd	(Displays the list of pages with page number XXX that were transmitted on the day "dd", i.e. ARC 178WE for wednesday)
ARC XXX	(Displays the list of pages with page number XXX that were transmitted on the day last selected by ARC XXXdd command)
ARC	(Continues the list of pages if not the complete list could be displayed on one screen)
ARC XXXX	(Displays the page with index (IDX) XXXX)
ARC XXXl	(Displays the last page with page number XXX in the archive)
ARC P	(Displays the previous page with the last selected page number in archive)
ARC uXXXdd	(Displays the list of pages which were created by the user with usercode XXX on the day "dd" (doesn´t have to be specified))
ARC Ddamoye	(Selects the archive for the date da.mo.ye, as ARC XXXdd)

Page number XXX may be replaced by ... to display the list of all pages.

EXAMPLES

Test by yourself

ARC 165WE	(Displays the list of pages with page number 165 which have been transmitted on last Wednesday)
ARC 303	(Displays the list of pages with page number 303 which have been transmitted on the date of the previously selected archive)
ARC 0231	(Displays the page that is stored in the archive with the index (IDX) number 0231)
ARC ...L	(Displays the last page in archive)
ARC P	(Displays the previous page in archive)
ARC U003SU	(Displays the list of pages that have been created by the user with usercode 003 and transmitted on sunday)
ARC D170692	(Displays the list of pages that have been transmitted on June the 17th 1992)

By using either ARC XXXdd or ARC Ddamoye one of the archives is selected. After that the day or date does not have to be specified for the previously selected archive. This means that ARC 133 will show all pages 133 in the previously selected archive.

DAC

The DAC command is used to specify the "Direct Access pages" used in TOP transmission. Up to 15 pages can be added to the list of direct access pages. It is recommended that the pages are named by the NAM command.

SYNTAX

✐ Available syntax.

DAC	(Displays the list of direct access pages)
DAC XXXr	(Removes the page XXX from the list of direct access pages)
DAC XXXa	(Adds the page XXX to the list of direct access pages)

TOP

The TOP command is used to define the TOP structure in TOP transmission. The main indexes (news,...) should be specified as block pages (displayed in cyan) and the subindexes (world news, local news, politics, sport, weather,...) should be specified as group pages (displayed in yellow). All other pages should be specified as normal pages or subtitle pages. If a page is specified as a (running) subtitle page (displayed in red) it can only be accessed from the terminal by GET and PUT but not by RUN and STO. All the pages that are used by the subtitle generator should be specified as subtitle pages. Running subtitle pages are put on air when no subtitling is running and stopped when subtitles are transmitted.

SYNTAX

✐ Available syntax.

TOP XXX	(Displays the TOP structure beginning with the page XXX)
TOP XXXn	(Defines page XXX as a normal page)
TOP XXXb	(Defines page XXX as a block page)
TOP XXXg	(Defines page XXX as a group page)
TOP XXXp	(Defines page XXX as a TV programme page)
TOP XXXs	(Defines page XXX as a subtitle page)
TOP XXXr	(Defines page XXX as a running subtitle page)
TOP	(Continues displaying the TOP structure if not the complete TOP structure could be displayed on one screen)

SYS

The SYS command is used to display the system status.

SYNTAX

✎ Available syntax.

SYS 0 (Displays the disk and operation data)

SYS 1 (Displays the first configuration page)

SYS 2 (Displays the second configuration page)

SYS 9 (Displays the system status)

The configuration data is described in the Installation manual of the Data Generator.

TST

The command TST is used to display the test page.

SYNTAX

✎ Available syntax.

TST (Displays the test page)

CLR

The CLR command is used to clear the page on the screen of the Editing Terminal. All Page Parameters are adjusted to normal and the link information is cleared. The character set is selected to be the same as on the page 100.01 and the display time is set to 15 seconds. This command should be used before creating new pages to prevent use of wrong parameters and links.

SYNTAX

✎ Available syntax.

CLR (Clears the page and sets all Page Parameters to normal)

TMC

The command TMC is used to control time commands. Time commands are commands which are automatically executed by the system on specified times and days. The time commands can be executed once only or repeatedly each day, week and also in other intervals which can be specified in a very flexible way. Each time command has its own unique number by which it can be retrieved, modified and deleted.

Each time command belongs to a user. This means that when the time command will be executed it will be executed with the rights (priority, allowed pages, ...) of the specified user. Consoles use usercode 0, users with priority 9 can read and modify all time commands (also time commands created by other users) and users with priority 1 can only create their own time commands and all time commands updated by users with priority 1 will belong to the user which has updated the time command.

SYNTAX

Available syntax.

TMC	(Displays the mask for a time command)
TMC L	(Displays the list of time commands which will be displayed in order of their execution)
TMC xL	(Displays the list of time commands in order of their execution but starting with time command x)
TMC V	(Displays the list of time commands with their descriptions which will be displayed in order of their execution)
TMC xV	(Displays the list of time commands with their descriptions which will be displayed in order of their execution but starting with time command x)
TMC ADD	(Adds the time command which is on the screen - first use the command TMC without any parameters and fill in the mask - to the list of time commands)
TMC x	(Displays the time command x - use TMC L first and find the unique number of the command first and then use TMC x to display the data)
TMC xU	(Updates the time command with the number x. However the time command x must first be displayed on the screen by TMC x and then modified before using TMC xU)
TMC xD	(Deletes the time command x. However the time command x must first be displayed on the screen by TMC x before using TMC xD)

See the section System Features / Time Commands for detailed explanation on using time commands.

EXE

The EXE command is used for execution of commands that are stored on any page of the Data Generator´s hard disk. The commands must be written on the beginning of any line of the page. You can add comments to the page containing commands but make sure that each comment starts on the second character of the line, the first character must be a space or a colour character otherwise the line is considered to contain a command which will be executed. You can use all commands in an EXE page tha can also be used from an editing terminal. When command from an EXE page are executed a virtual terminal is created so that also commands GET and INS can be used.

SYNTAX

Available syntax.

EXE XXX	(Executes all commands on the page XXX)
EXE XXXc	(Checks all commands on the page XXX for the correct syntax)
EXE XXXl	(Executes all commands on the page XXX and displays the errors returned after execution of each command)
EXE XXXa	(Executes all commands on all subpages of the page XXX starting with the first command on the subpage 1)
EXE XXX.SSf	(Executes all commands on subpages >= SS of the page XXX starting with the first command on the subpage SS)
EXE	(Checks all commands that are on the page currently on screen for the correct syntax)

FAS

The FAS command is used for selection of pages that should be transmitted exactly at display times specified on each page or subpage. See Page Parameters of the FAB Teletext Editing Terminal to select the exact display time of a page or subpage. When a page is specified as a fast rotating page and it is not rotating it will be transmitted exactly at the display times selected in Page Parameters. When a page consists of more subpages (rotating page) all subpages will be displayed exactly for the display time defined in Page Parameters on each subpage. The display times can also be defined by the TIM command. It is possible to select up to 16 pages as fast rotating and it is recommended that page 100 is also fast rotating (with display times from 3 to 6 seconds).

SYNTAX

Available syntax.

FAS	(Displays the list of fast rotating pages)
FAS XXXa	(Adds the page XXX to the list of fast rotating pages)
FAS XXXr	(Removes the page XXX from the list of fast rotating pages)

SMS

The command SMS is used to send a message to other users of the Data Generator. When the user the message has been sent to executes the next command a special tone will be generated and a note will appear about the waiting message he can read by using the RMS command. If the message is not read within one month it is automatically erased.

SYNTAX

Available syntax.

SMS XXX	(The page on the screen is sent to the user with the user code XXX)
SMS tXX	(The page on the screen is sent to any user using the terminal XX)
SMS 005	(The page on the screen is sent to the user with usercode 005)
SMS T07	(The page on the screen is sent to anybody working on the terminal number 7)

RMS

The RMS command is used to read a message that was sent by using the SMS command. The message is displayed and erased from the Data Generator´s hard disk after executing this command. When MORE-TYPE RMS is displayed in the command line additional messages can be read using the RMS command. If a message is not read within one month it is automatically erased.

SYNTAX

✎ Available syntax.

RMS	(Reads a message if it is available)

HLP

The HLP command is used to display help for all commands that can be used on the FAB Teletext Data Generator.

SYNTAX

✎ Available syntax.

HLP	(Displays the list of all commands)
HLP CCC	(Displays the help for the command CCC)
HLP INS	(Displays help for the INS command)

PAS

The PAS command is used to change the password of the user that is currently registered to the system.

SYNTAX

✎ Available syntax.

PAS	(Displays the mask for entering new password)
PAS username,oldpassword	(Changes the old password with the one currently on the screen)

EXAMPLES

💻 Test by yourself

First issue the command PAS to get the mask for a new password. Then enter the new password immediately after PASSWORD and repeat the new password immediately after REPEATED. Then issue the command

```
PAS username,oldpassword
```

where username is the username of the user that is currently regsitered on the terminal and oldpassword is the old password of the user.

ACC

The ACC command is used to display the access information.

SYNTAX

Available syntax.

ACC	(Displays the access information)

INF

The INF command is used to display information about a page.

SYNTAX

Available syntax.

INF ppp	(Displays information about the page ppp)

EXAMPLES

Test by yourself

INF 198	(Displays information about the page 198)

CLK

The CLK command is used to display the time of day and the date the Data Generator is transmitting.

SYNTAX

Available syntax.

CLK	(Displays the time of day and the date)
CLK OFF	(Switches off the animated clock and displays the normal clock. See the Animated Clock section for details)

DST

The DST command is used to change between the Daylight Saving Time and the normal time. This command should only be executed from the time commands (see the command TMC) between 01:00 and 22:59 hours by uses with priority 1, 9 or consoles.

SYNTAX

✎ Available syntax.

DST ON	(The clock will be moved one hour forward to daylight saving time)
DST OFF	(The clock will be moved one hour backwards to the normal time)

WPR

The WPR command is used to write protect specific teletext pages. Only a complete teletext page with all of its subpages can be write protected. When a page is write protected it is not possible to PUT any page on the write protected page number. It is not possible to write protect pages in the file system.

SYNTAX

✎ Available syntax.

WPR XXX	(Displays the list of write protected pages starting with page XXX)
WPR	(Continues display of write protected pages if there are more than they fit on one screen)
WPR XXXp	(Write protects the page XXX)
WPR XXXu	(Unprotects the page XXX)

VPT

The VPT command is used to select pages that should be treated as VPT pages. When a page is marked as a VPT page and it is put into transmission (by INS or RUN command), the system tries to find a two-digit code in magenta colour and replaces it by a checksum code that is calculated from the rest of the page. Please consult the VPT specification, available from IRT in Munich for details on how a VPT has to be built and what data it should contain.

SYNTAX

Available syntax.

VPT XXX	(Displays the list of VPT pages starting with page XXX)
VPT	(Continues display of VPT pages if there are more than they fit on one screen)
VPT XXXa	(Marks the page XXX as a VPT page)
VPT XXXr	(Unmarks the page XXX as a VPT page)

Chapter

6

System Features

The System features of the FAB Teletext Data Generator
FT-DGS 4

SYSTEM FEATURES

Information

This chapter describes some of the additional features of the FAB Teletext Data Generator. You should read this section to make sure that some actions which are performed automatically will not cause any loss of data.

Transmission of Pages

PAGES

Information

When the Data Generator is switched on it automatically starts transmitting all pages that it has been transmitting before it has been switched off. Also at the same time all pages on the hard disk are checked for their contents. Only when the checking of the pages is finished the terminals can start using the Data Generator. On trying to issue any command before all pages are checked the message OFF LINE will appear which means that the Data Generator is not ready to execute any commands from the terminals.

Every day exactly on midnight the system starts transmitting all the pages that are currently transmitted again. It is the same as issuing RUN command on all pages that are currently transmitted. This is needed because when the date in the header line of each page is changed also the CRC code of the page has to be recalculated and all pages have to be retransmitted again.

Be careful when you are preparing (rotating) pages. When a page is changed on the hard disk with the PUT command, the page with the same number in transmission is not changed. You should be aware that the page you stored by the PUT command will automatically be transmitted on midnight or when the Data Generator is restarted.

Automatic Archive

ARCHIVE

🗀 Information

When the automatic archive is enabled (see Installation manual of the Data Generator) all the pages that are not yet stored in the archive (the changed pages) and are transmitted by the RUN command are automatically stored in the archive.

The archive is organised for the past days. To access the archive the ARC command must be used.

To see the archive directory use the ARC DIR command. The number of pages stored in archive will be displayed.

To select the day of the archive you want to search in use the command ARC ...MO for Monday, ARC ...TU for Tuesday and so on or ARC D020992 for the archive for the date 2nd of September 1992.. When using the command ARC after that the previously selected day will automatically be used.

To search for a page in the archive you should know the number of the page when it was transmitted for the first time. By using the command ARC 335 the stored data of all different transmissions of the page 335 will be displayed. If not all of the data can be displayed on one screen just type ARC again to see more.

The data that is displayed is:

ARCHIVE DATA

🗀 Information

Time	time when the first transmission of the page has been invoked.
IDX	index of the page in the archive.
Pgn	page number.
Trm	terminal that invoked the transmission of the page.
RUN	usercode of the user that invoked the transmission (CON=console).
PUT	usercode of the user that stored the page to Data Generator´s hard disk.

SPECIAL DATA

🗀 Information

The special meaning of the data displayed:

Trm	RUN	PUT	Description
Txx	**y**	**z**	user y issued RUN from the terminal xx, user z issued PUT or INS
SYS	**SYS**	**z**	user z issued PUT, the system started transmitting the pages on midnight or when it was restarted
TMC	**y**	**z**	user z issued PUT, the system started transmitting the page because of one of the time commands, created by user y

If you want to see the data of all pages stored in the archive of selected day not regarding the page number use the command ARC ... (replace the page number by ...). To see the contents of the page that is stored in the archive you must know the index (IDX) under which it is stored in the archive. Use the command ARC 0005 to display the page with index 0005.

It is also possible to search for pages created by a specific user. For that use the ARC uXXXtt command, where XXX is the usercode of the user you are searching for and tt is the day (MO, TU, WE,..) you want to search in. It is not necessary to specify the day (Examples: ARC U007SU searches for all pages that have been stored to the Data Generator´s hard disk by the user with usercode 007 on sunday,

ARC U043 searches for pages created by user 043 on the last day selected).

Time Commands

TIME COMMANDS

🗀 Information

Time commands are used for automatic execution of commands at specific times on specific days. Up to 999 time commands can be specified.

Time commands are managed from an editing terminal using the command TMC, which is only available to users with priorities 1, 9 and consoles. See the description of command TMC to see how to create, modify and delete time commands.

The command TMC without any parameter will display a mask for a time command. Following fields are available and should be filled in:

Usercode:

------------ Time & Date ------------

Hour:

Minute:

Second:

Day/of week:

Month:

Year:

Execute if before:

------ Description of command -------

Description:

Commands to be executed:

The field usercode must contain the code of the user which is responsible for the time command. Normally this is the usercode of the user that created this time command and consoles use usercode 0. Only users with priority 9 and consoles can speicify a different usercode that their own and this should be done with taking care. You should be aware that all commands are later executed with the rights (priority, allowed pages, allowed directories, allowed commands...) of the specified user and maybe some commands will not be executed correctly if the specified usercode does not have enough rights for the desired command.

The Time & Date section may contain wildcards (XX - which means any matching) and also more than one specified number. Always the next time & date will be found that is matching the specified data.

The fields HOUR, MINUTE, DAY/OF WEEK, MONTH and YEAR can contain wildcard (XX) but the field SECOND can not contain wildcard.

EXAMPLES

Test by yourself

Example1:

Hour: 12

Minute: 10

Second: 13

Day: 25

Month: 07

Year: 98

When this is specified, the command will be executed only once and only on the specified date and at the specified time.

EXAMPLES

Test by yourself

Example 2:

Hour: 12 15 19

Minute: XX

Second: 03

Day: 25 26 27

Month: XX

Year: XX

When this is specified, the command will be executed undependent of the year, month and minute but whenever the hour is matching 12, 15 or 19 and the day is matching 25, 26 or 27 and the second is matching 03.

For example if today is 23rd of March, the command will first be executed on 25th of march at 12:00:03.

EXAMPLES

Test by yourself

Example 3:

Hour: 05

Minute: 15

Second: 03

Day: MO WE FR

Month: XX

Year: XX

When this is specified, the command will be executed each Monday, Wednesday and Friday at 05:15:03.

RULES

Information

You can use any combination of above examples as long as you follow these rules:

- only one wildcard may be specified in a field
- the field SECOND must not contain a wildcard
- each of the fields may either contain 1 or more numbers
- the field DAY/OF WEEK may either contain numbers for days of month or words for days of week (first 2 characters of English name) but not both)

The "Execute if before" field contains the date and time when the time command should not be executed any more. You can also enter a short description of the command.

You can specify one command per line in all lines below the line containing "Execute commands:". Please note that you can specify all commands that you are allowed to use from the editing terminal. When commands from the TMC page are executed a virtual terminal is created in the system which enables execution of all commands including GET and INS where the page memory of the terminal is required.

If you require more commands to be executed at the specified time and date then use the command EXE with a parameter specifying a page that will contain more commands for execution. See the description of command EXE for details.

When a time command is added to the list of time commands with the command TMC ADD its first execution time and date is calculated and regarding this the time command is sorted into the list of time commands. With the command TMC L you are able to see all time commands in their order of execution. Each time command can be found in the list only once even if the command should be executed more often. When the time is higher or equal to the specified time of the time command that should be executed first, that time command is executed.

This means that also if the system is switched off, all time commands will be executed when the system is running again even if the time of execution has passed. After the time command has been executed its next time and date of execution are calculated. If the next time of execution can not be calculated (maybe the command only had to be executed once) or if the next time of execution is higher than what has been specified in "Execute if before" field, than the time command is deleted from the list of time commands. Otherwise it is again sorted in the correct position in the list of time commands.

It is very important to know that the order of execution of time commands that should be executed at the same time and date is coincidental. The reason is that when a time command is sorted into the list of time commands its exact position is undefined if there is any other time command with the same time and date of execution already present (you can never know which one will be executed first).

So if the order of execution of time commands is important, the times should differ at least in the SECOND field for at least one second.

TOP System

TOP FEATURES

🗀 Information

TOP stands for Table of Pages and is a special standard for categorised transmission of teletext pages, published by IRT München.

The TOP standard enabled easier access to teletext pages without having to know the number of a teletext page. It is a big help for teletext viewers that have a teletext decoder that supports the TOP standard.

The big advantage of the TOP system compared to FLOF (FASTEXT) is its implementation on the FAB Teletext Data Generator. The TOP system only has to be configured once or when changing the index structure of the teletext, all the rest is handled automatically by the FAB Teletext Data Generator enabling the teletext editors to concentrate on the contents of teletext instead of having to think about how to specify TOP settings as normally has to be done when using FASTEXT. The other big advantage of the TOP system on the viewer side is that the viewer will get a message when he selects a page that is not in transmission. Also when pressing the NEXT and PREVIOUS PAGE buttons will skip the pages that are not transmitted.

According to the TOP standard the teletext should be structured into blocks and groups of pages. Each block can consist of more groups. The following is an example of a teletext structure according to TOP standard:

EXAMPLES

💻 Test by yourself

Page number	TOP Type	Page name
100	Block	Main index
110	Block	News index
111	Group	International
123	Group	National
150	Block	Sport index
151	Group	International
160	Group	National
300	TV Programme	TV Index
301	Group	Morning
302	Group	Afternoon
303	Group	Evening
777	Subtitle	Subtitles

In the TOP structure each page can be:

- Block
- Group
- TV Programme (block)
- Subtitle
- Normal

Block pages should be the pages with main indexes like NEWS INDEX, SPORTS INDEX, TV INDEX and similar. Groups should be created within the blocks. As seen above the block NEWS INDEX has 3 groups: International, National and Local. Pages that are within group and block pages are normal pages. TV Programme pages have the same meaning as block pages except that they should contain the information about the TV programme. Some VCRs are looking for the pages that are marked as TV Programme in the TOP structure to enable TEXT PROGRAMMING. Subtitle pages are pages where subtitles will be transmitted.

To create the TOP structure use the TOP command of the Teletext Data Generator.

SYNTAX

Available syntax.

TOP xxxB	will mark the page xxx as a block page
TOP xxxG	will mark the page xxx as a group page
TOP xxxP	will mark the page xxx as a TV Programme page
TOP xxxS	will mark the page xxx as a subtitle page
TOP xxxR	will mark the page xxx as a (running) subtitle page
TOP xxxN	will mark the page xxx as a normal page
TOP 100	will display the TOP structure starting with page 100

When the teletext viewer has a teletext decoder that supports the TOP system, he can easily browse through the pages that are in the TOP structure by only pressing 2 coloured buttons on the remote control.

Depending on the current page number in the bottom line of the TV screen the name of the next block page will be displayed in the cyan colour and the name of the next group page will be displayed in yellow colour. By pressing the cyan or yellow button on the remote control, the teletext decoder jumps to the page that is the start of the next block or group. The way how the block and group pages are displayed depends on the teletext decoder in the TV set. The remote control should also have a button that will display a menu with available subtitle or TV Programme pages and select one of them.

The TOP structure is normally transmitted on pages 1F0, 1F1, 1F2 and following (if more than 3 are required). The page 1F0 is the BASIC TOP TABLE. It contains information about which pages are currently transmitted allowing the teletext decoder to notice the viewer that he selected a page that is not in transmission. There is also information about the TOP structure (block / group pages) and the page numbers where the MULTIPAGE TOP TABLE and the ADDITIONAL TOP TABLE can be found.

The page 1F1 is the MULTIPAGE TOP TABLE. It contains information on the number of subpages of all pages that are in transmission. The pages 1F2 and following are the ADDITIONAL TOP TABLES. They contain the names of all pages that are not specified as normal in the TOP structure.

For more information on the TOP system and for exact TOP specification you should contact IRT München.

Animated Clock

ANIMATED CLOCK

Information

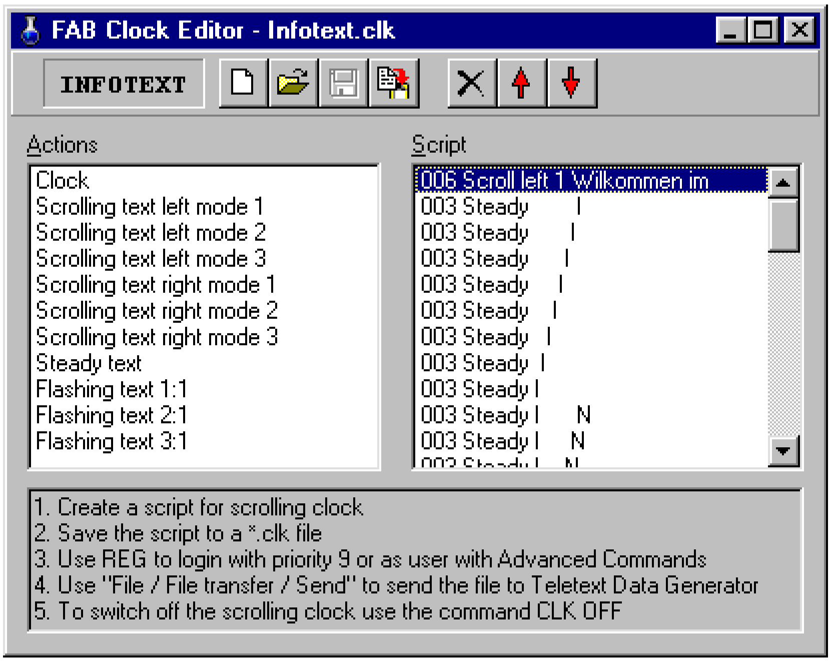
The FAB Teletext Data Generator supports a world-wide unique feature of animated clock. This feature enables displaying animated messages in the header row where normally the clock is displayed.

To be able to define the text and scrolling modes for the text that will be displayed instead of the clock you will have to use the "FAB Clock Editor" software for Windows which is supplied as part of the FAB Teletext Editor for Windows FT-ETTWIN.

The FAB Clock Editor enables creation of a script for the animated clock. The best way to find out what are the possibilities is to load a demo clock file (click on the Open button) and see the possibilities which are available. In the left upper corner the preview of the current animated clock is displayed.

EXAMPLES

Test by yourself



Actions:

- Clock
- Scrolling text left mode 1
- Scrolling text left mode 2
- Scrolling text left mode 3
- Scrolling text right mode 1
- Scrolling text right mode 2
- Scrolling text right mode 3
- Steady text
- Flashing text 1:1
- Flashing text 2:1
- Flashing text 3:1

Script:

```
006 Scroll left 1 Wilkommen im
003 Steady       I
003 Steady      I
003 Steady     I
003 Steady    I
003 Steady   I
003 Steady  I
003 Steady I
003 Steady I
003 Steady I     N
003 Steady I    N
```

1. Create a script for scrolling clock
2. Save the script to a *.clk file
3. Use REG to login with priority 9 or as user with Advanced Commands
4. Use "File / File transfer / Send" to send the file to Teletext Data Generator
5. To switch off the scrolling clock use the command CLK OFF

The left list displays the available animation effects. To build additional effects use the "Steady text" effects and enter each part of the text that should be displayed.

Animated clock sequences are stored in *.clk files. To start the transmission of the created animated clock use the FAB Teletext Editor for Windows FT-ETTWIN. First use the command REG to login either with priority 9 or with any password that has "Advanced commands" enabled. The select the option File / File transfer / Send from the menu and send the *.clk file to the FAB Teletext Data Generator.

To switch off the animated clock and to display the normal clock use the command CLK OFF.

Subpages

Automatic Subpage Numbering

SUBPAGE NUMBERING

🗁 Information

The FAB Teletext Data Generator will automatically put the subpage number onto all subpages of each page that consists of more than 1 subpage. In case that a page consists of 5 subpages on the 3rd subpage the text 3/5 will be displayed.

There are two ways how this can be done:

- In the CONFIG program for configuration of teletext it is possible to define the X and Y co-ordinates of the position on the teletext page where the actual subpage number should be displayed. You will find this setting in Advanced / Transmission / Settings valid for all magazines / Subpage numbering. This setting is valid for all pages that consist of more than one subpage. You can also change this setting with the command CFG SBP SET.

EXAMPLES

💻 Test by yourself

- To be able to override the position where the subpage/total numbers will be displayed on a single page it is possible to put the following sequence of characters onto the position where this should be displayed:

```
<Conceal><Conceal>SN<Alphanumerics colour>
```

- Please note that exactly these 5 characters (you can use any control character for the colour) have to be entered into the page and only in this case the text will be substituted by the subpage number.

When a page consists of more than 99 subpages the total number of subpages will be displayed as 99 and the current subpage number will be displayed without the hundreds and thousands. Therefore the maximum possible display will never exceed 99/99.

Using Subcodes for Subpages

SUBCODES

Information

In Teletext each page carries a page number and also a subpage number. The page number can be a number from 100 to 899, but also hexadecimal numbers are allowed like 10A, 2A0, 3FE and similar. In total there are 2048 page numbers available, that is 800 decimal page numbers from 100 to 899 and additional 1248 hexadecimal page numbers.

Each page can consist of more subpages. Normally the Teletext Data Generator will define the subcode for each subpage automatically. In case that a page consist of one subpage only the page will be assigned the subcode 0. In case that a page consists of more than one subpage each subpage will be assigned a different subcode. The first one will get the subcode 1, the second one 2, the 10th will get the number 16 decimal (which is 10 hex and not 0A hex which could be expected).

To be able to define an individual subcode for each subpage special syntax has been added for the commands PUT and INS.

SYNTAX

Available syntax.

PUT XXX-Sssss	Stores the page on the screen as page XXX, overwriting the previous page XXX. The page will be transmitted with the subcode ssss when put into transmission.
INS XXX-Sssss	Stores the page on the screen as page XXX, overwriting the previous page XXX and puts the page into transmission. The page will be transmitted with the subcode ssss.

The parameter -Sssss where ssss is the subcode (a hexadecimal number between 0 and 3F7F, which means that for example the subcode 80 is invalid) is allowed in any available syntax of the commands PUT and INS.

Remember however that when the page is read with the command GET you will not get the subcode of the page. To store the page back with the same subcode you need to specify the parameter -Sssss again.

EXAMPLES

Test by yourself

PUT 123.01-S1E	Stores the page as subpage 1 of the page 123 with the subcode 001E hexadecimal.
INS 279.03-S3E7F	Stores the page as subpage 3 of the page 279 with the subcode 3E7F hexadecimal and puts the page 279 into transmission.

Working with Real Subcodes

SUBCODES

Information

A special mode for working with subpages has been introduced to enable using fixed subcodes for subpages. In this mode it is possible to address each subpage with its real subcode number.

This mode is supported when using additional syntax which is available for commands PUT, INS and DEL.

SYNTAX

Available syntax.

PUT XXXRSssss	Stores the page on the screen as page XXX with subcode ssss. If the page XXX consists of one or more subpages then all existing subpages of the page XXX are first searched for the subpage with the subcode ssss. If the subpage with this subcode exists, it is overwritten. If the subpage with subcode ssss does not exist then the page is stored as a new subpage in the correct order of subcodes.
INS XXXRSssss	Stores the page on the screen as page XXX with subcode ssss and puts the page into transmission. If the page XXX consists of one or more subpages then all existing subpages of the page XXX are first searched for the subpage with the subcode ssss. If the subpage with this subcode exists, it is overwritten. If the subpage with subcode ssss does not exist then the page is stored as a new subpage in the correct order of subcodes.
DEL XXXRSssss	Deletes the subpage with the subcode ssss of the page XXX. The page XXX is first searched for the subpage with the subcode ssss and if found the subpage is deleted.

EXAMPLES

Test by yourself

PUT 123RS1E	Stores the page as a new subpage of the page 123 with the subcode 001E hexadecimal. If any subpage of the page 123 already had the subcode 1E it will be overwritten.
INS 279RS3E7F	Stores the page as a new subpage of the page 279 with the subcode 3E7F hexadecimal and puts the page 279 into transmission. If any subpage of the page 279 already had the subcode 3E7F it will be overwritten.

File System

The FAB Teletext Data Generator implements a similar directory structure as known from DOS. There is a possibility to create directories, store teletext pages into them and read the stored pages from the directories.

The following commands are used to maintain the directory structure:

MKD	creates a directory
RMD	removes a directory
CHD	changes the current directory
DRI	displays the directory information
DRU	updates the directory information

The following commands also operate on the directories in addition to their normal functions:

PUT	stores a page in the directory
GET	reads a page from the directory
DEL	deletes a page in the directory

It is important to know that instead of using the character \ to identify a directory like in DOS the character / must be used on the FAB Teletext Data Generator. The directory name can be up to 8 characters long. Use the command DRI to display the information about the current directory. The information displayed will be:

Directory:	/directory
Owner:	Owner Usercode
Read Priorities:	Priorities allowed to read directory
Write Priorities:	Priorities allowed to write directory

The field Directory: displays the name of the current directory.

The field Owner: displays the usercode of the owner of the directory. The owner of the directory can either be None or any available usercode. The owner is allowed to read and write the directory independent of his priority.

The field Read Priorities: displays the priorities that are allowed to read the directory. All users having one of these priorities are allowed to read the directory. In addition priorities 0 (Console) and 9 (Sysop) are allowed to read all directories.

The field Write Priorities: displays the priorities that are allowed to write the directory. All users having one of these priorities are allowed to write the directory. In addition priorities 0 (Console) and 9 (Sysop) are allowed to write all directories.

Normally the root directory / has no owner and no write priorities are defined. This means that only Sysop and Console priorities can write the root directory /.

Writing directory actually means writing teletext pages to a directory, deleting pages from a directory and creating a subdirectory within a directory. So normally the Sysop or Console will create some subdirectories within the root directory. The directory structure should normally look something like this (please note that the directory name can be up to 8 characters long):

EXAMPLES

Test by yourself

```
/NEWS/NATIONAL/

     /INTERNAT/

     /LOCAL/

/SPORTS/NATIONAL/

       /INTERNAT/

       /LOCAL/

/WEATHER/

/PETER/OLD/

      /PRIVATE/

/USER2/HISDATA/

      /PRIVATE/
```

To create the directory structure you can use the following commands (appropriate for your needs):

EXAMPLES

Test by yourself

```
MKD /NEWS

MKD /NEWS/NATIONAL

MKD /NEWS/INTERNAT

MKD /SPORTS

CHD /SPORTS

MKD NATIONAL
```

MKD INTERNAT

MKD LOCAL

MKD /PETER

MKD /PETER/PRIVATE

When a new directory is created by using the command MKD the Owner, Read and Write Priorities are copied from the current directory. This means that after you have created a directory you should move to that directory by using the command CHD and use the commands DRI and DRU to set the desired Owner, Read and Write Priorities. In the above example of the directory structure the directories /NEWS, /NEWS/NATIONAL, /SPORTS,... should have read and write priorities 1 to 6. The directories that belong to one user (/PETER, /USER2) should have as Owner the usercode of the user and no read and write priorities to enable access to the directories to the Owner only (and of course the Sysop and Console priorities).

By using the command USR the Sysop and Console priorities can change the initial data of each user. In addition to the normal data (password,...) also the initial directory of the user can be set. So in the above example the initial directory of the user PETER can be /PETER or maybe /NEWS. The user is automatically placed into the initial directory after registering by the REG command. After that the user can still move to another directory by using the command CHD, which changes the current directory.

The commands PUT, GET and DEL normally expect a page number as a parameter. If the parameter can not be interpreted as a number, the parameter is interpreted as the page name. This page name will be then stored, loaded or deleted from the disk depending on the command. The page name can also consist of 8 characters most and must not start with a digit. So using the command PUT 1PETER will produce an error instead of saving a page to disk.

If your current directory is /SPORTS and you use the command PUT GOLF1 the page will be stored in the directory /SPORTS with the name GOLF1. The page can be retrieved by using the command GET GOLF1.

The directory can be displayed by using the command DRI. All pages that are stored in that directory will be displayed.

If your current directory is /SPORTS and you would like to access a page from another directory you can always specify the directory path in front of the page name that should be accessed (the Read or Write Priorities of the specified directory must of course be appropriate to allow access to the pages), i.e. PUT /NEWS/LATEST or PUT NATIONAL/FORMULA1.

A teletext page that is stored in the file system is identical to normal teletext pages stored with page numbers. This means that a page in the file system can consist of more subpages, for example you can issue the command

PUT NATIONAL/FORMULA1.02 which will store the page that you have on the screen as the second subpage of page FORMULA1.

However you will find out that there is a problem with specifying a parameter within the command, for example you can issue the command PUT 102A which will append the page that you have on the screen as the last subpage of the page 102. However if you would specify the parameter A to a name of the page within the file system, the system can not know that the character A is a parameter and is not part of the name of the page (i.e. PUT PETERA). Therefore you can use a fullstop "." character to define a parameter. So to append a new subpage to page PETER you would use the command PUT PETER.A and to insert a subpage you can use the command PUT PETER.02I.

Generally in all commands you can always use the character "." to specify that the following character is a parameter. Therefore all following command forms are valid:

EXAMPLES

Test by yourself

```
INS 102A

INS 102.A

INS 102.02I

INS 102.02.I
```

Please note that you can use pages from the file system in all commands. Therefore you can for example copy a page from the file system onto a normal page number. Following are examples of some commands where pages from the file system are used:

```
GET /TEST/PETER

COP /NEWS/MAIN 111D

MOV /NEWS/MAIN /NEWS/MAINOLD
```

Mask Pages

The Teletext Data Generator is capable of storing mask pages with page numbers 100 to 8FF. Each mask page can consist of up to 8000 subpages.

The mask pages are used to add information (lines) to regular teletext pages. Each regular page will be changed according to the following procedure before being transmitted:

- Each subpage of a regular page will be read and lines which are contained on the mask page with the same page and subpage number will be added to the regular page. By this procedure it is possible that some lines of the regular page will be overwritten.

- If the mask page contains less subpages than the regular page then the first subpage of the regular page that is higher than the highest mask subpage will be combined again with the first subpage of the mask page. The second subpage of the regular page without the corresponding mask subpage will be combined with the second mask subpage and so on.

- If the teletext page consists of a single subpage and the mask page consists of more subpages then each subpage of the mask page will be combined with the first (and only) subpage of the teletext page.

- If the mask page contains more subpages than the regular page then the page resulting from the combination of the mask and regular subpages will contain the same number of the subpages as the regular page. All higher subpages of the mask page will be ignored.

The Teletext Data Generator is storing the mask pages separated from the regular pages. They are combined right before the regular page is actually been put into transmission.

The mask pages allow using one teletext page by two users where each user can use only some lines of the teletext page. One user should store information into the teletext page and the other one should store information into the mask page. The transmitted page will be combined before being put into transmission.

Please note that the regular teletext page is used as the base page and the mask page is being overlaid. This means that the page display time as well as the header bits are taken from the base page.

Transmission of Mask Pages

Commands for transmission of mask pages are used to transfer mask pages to the Teletext Data Generator and also to read them..

GEM (Get Mask)

This command is used to read a mask page from the Teletext Data Generator.

SYNTAX

✎ Available syntax.

The syntax is identical to the command GET, except that a mask page is read instead of a regular page.

PUM (Put Mask)

This command is used to store a mask page in the Teletext Data Generator. If the regular page with the same number is currently being transmitted then it will be updated with the new information immediately.

SYNTAX

✎ Available syntax.

The syntax is identical to the command PUT, except that a mask page is stored instead of a regular page.

INM (Insert Mask)

This command is used to store a mask page in the Teletext Data Generator and to put the regular page with the same page number into transmission.

SYNTAX

✎ Available syntax.

The syntax is identical to the command INS, except that a mask page is stored instead of a regular page.

Handling of Mask Pages

Commands for handling of mask pages are used to copy, move or delete mask pages. Please note that all changes caused by these commands are immediately put into transmission if the regular page has been in transmission when the commands were executed.

TRM (Truncate Mask)

This command is used to truncate the number of subpages of a mask page that is stored in the Teletext Data Generator.

SYNTAX

✎ Available syntax.

The syntax is identical to the command TRU, except that a mask page is truncated instead of a regular page.

DEM (Delete Mask)

This command is used to delete a mask page or a subpage of a mask page that is stored in the Teletext Data Generator.

SYNTAX

✎ Available syntax.

The syntax is identical to the command DEL, except that a mask page is deleted instead of a regular page.

COM (Copy Mask)

This command is used to copy a mask page or a subpage of a mask page to another mask page or subpage.

SYNTAX

✎ Available syntax.

The syntax is identical to the command COP, except that a mask page is copied instead of a regular page.

MOM (Move Mask)

This command is used to move a mask page or a subpage of a mask page to another mask page or subpage.

SYNTAX

✎ Available syntax.

The syntax is identical to the command MOV, except that a mask page is moved instead of a regular page.

DIM (Directory of Masks)

This command is used to display the list of all mask pages that are stored in the Teletext Data Generator.

SYNTAX

✎ Available syntax.

The syntax is identical to the command DIR, except that a list of mask pages is displayed.

Transmission of PDC Data

PDC

Information

The FAB Teletext Data Generator supports transmission of PDC data. This data corresponds to the VPS Data which is transmitted in Germany for control of VCR recording. The Data Generator also enables decoding of VPS or PDC data and its retransmission as PDC data in packet 8/30/2.

Command Syntax for PDC

To configure the transmission of PDC you should use the CFG PDC command (you must login with priority 9 to be able to use this command):

SYNTAX

Available syntax.

CFG PDC ON	Enables transmission of PDC data. Make sure to set the correct data using CNISET and SET commands.
CFG PDC OFF	Disables transmission of PDC data.
CFG PDC CNISET ccann	Defines the default static values for PDC transmission. Sets the country code to cc, the area code to a and the network code to nn. Example for ARD: 1D101
CFG PDC SET da mo ho mi pt pc	Defines the dynamic PDC data that should be transmitted. All values are in integer format: da=day, mo=month, ho=hour, mi=minute, pt=Program type, pc=PCS. Example for no PDC label: CFG PDC SET 0 15 31 63 255 2
CFG PDC SET TCC	Set timer-control code
CFG PDC SET RIT	Set recording inhibit/termination code
CFG PDC SET INT	Set interruption code
CFG PDC SET CON	Set continuation code

Make sure to read the PDC specification to find correct values for each PDC related command.

Following commands will define the audio mode data which is transmitted as part of PDC data:

SYNTAX

Available syntax.

CFG PDC SET STEREO	Stereo audio mode
CFG PDC SET MONO	Mono audio mode
CFG PDC SET DUAL	Dual audio mode

Following commands will enable the definition of the VPS/PDC decoder source. The source is used to read VPS and PDC to enable retransmission of the same data on the output in VPS and PDC format:

SYNTAX

Available syntax.

CFG PDC SRC NONE	Disables decoding of VPS/PDC
CFG PDC SRC VPS A	Decodes VPS from main video path input. Only hour and minute field will be read
CFG PDC SRC VPS A LBL	Decodes VPS from main video path input. All fields will be read including station ID
CFG PDC SRC PDC A	Decodes PDC from main video path input. Only hour and minute field will be read
CFG PDC SRC PDC A LBL	Decodes PDC from main video path input. All fields will be read including station ID
CFG PDC SRC VPS B	Decodes VPS from main video path input. Only hour and minute field will be read
CFG PDC SRC VPS B LBL	Decodes VPS from main video path input. All fields will be read including station ID
CFG PDC SRC PDC B	Decodes PDC from main video path input. Only hour and minute field will be read
CFG PDC SRC PDC B LBL	Decodes PDC from main video path input. All fields will be read including station ID

Transmission of VPS Data

PDC

Information

The FAB Teletext Data Generator supports transmission of VPS data in line 16 which is transmitted in Germany for control of VCR recording. The Data Generator also enables decoding of VPS or PDC data and its retransmission as VPS data in line 16.

Command Syntax for VPS

To configure the transmission of VPS you should use the CFG VPS command (you must login with priority 9 to be able to use this command):

SYNTAX

Available syntax.

CFG VPS mode	Defines the mode of insertion of VPS data into line 16 where mode can be one of the following words:

OFF	Stops the insertion of VPS data and blanks the line 16
PASS	Stops the insertion of VPS data and passes through the line 16
ON	Starts insertion of VPS data into line 16
COPY	Copies the VPS data present on the input (see CFG VPS SRC command) and inserts the same data into line 16
BRIDGE	Same as COPY
BLANK	Erases line 16 and does not pass it though and also does not insert VPS data
TTX	Inserts teletext into line 16 and does not insert VPS data

CFG VPS CNISET ccann	Defines the default static values for VPS transmission. Sets the country code to cc, the area code to a and the network code to nn. Example for ARD: 1D101
CFG VPS SET da mo ho mi pt pc	Defines the dynamic VPS data that should be transmitted. All values are in integer format: da=day, mo=month, ho=hour, mi=minute, pt=Program type, pc=PCS. Example for no VPS label: CFG PDC SET 0 15 31 63 255 2

Make sure to read the VPS specification to find correct values for each VPS related command.

The possible values of the parameter “pc” are:

4	mono, not youth protected
8	stereo, not youth protected
12	dual, not youth protected
5	mono, youth protect
9	stereo, youth protect
13	dual, youth protect
6	mono, youth protect
10	stereo, youth protect
14	dual, youth protect
7	mono, not youth protected
11	stereo, not youth protected
15	dual, not youth protected

CFG VPS SET TCC	Set timer-control code
CFG VPS SET RIT	Set recording inhibit/termination code
CFG VPS SET INT	Set interruption code
CFG VPS SET CON	Set continuation code

Following commands will define the audio mode data which is transmitted as part of VPS data:

SYNTAX

✎ Available syntax.

CFG VPS SET STEREO	Stereo audio mode
CFG VPS SET MONO	Mono audio mode
CFG VPS SET DUAL	Dual audio mode

Following are some example commands that allow setting the transmitted VPS label:

EXAMPLES

Example commands

CFG VPS SET 25 7 19 0	Sets the VPS label to month 25 day 7 hour 19 and minute 0. The pt and pc parameters are optional and are not specified here.
CFG VPS SET 0 15 31 63	Timer-control (VPS does not work; VCR will record using the time)
CFG VPS SET 0 15 30 63	Record inhibit/Terminate (program that can not be recorded and does not have its own label, like commercials, promo)
CFG VPS SET 0 15 29 63	Interruption code (INT) (the program is interrupted, the previous VPS label will be continued later)

Following commands will enable the definition of the VPS/PDC decoder source. The source is used to read VPS and PDC to enable retransmission of the same data on the output in VPS and PDC format:

SYNTAX

Available syntax.

CFG VPS SRC NONE	Disables decoding of VPS/PDC
CFG VPS SRC VPS A	Decodes VPS from main video path input. Only hour and minute field will be read
CFG VPS SRC VPS A LBL	Decodes VPS from main video path input. All fields will be read including station ID
CFG VPS SRC PDC A	Decodes PDC from main video path input. Only hour and minute field will be read
CFG VPS SRC PDC A LBL	Decodes PDC from main video path input. All fields will be read including station ID
CFG VPS SRC VPS B	Decodes VPS from main video path input. Only hour and minute field will be read
CFG VPS SRC VPS B LBL	Decodes VPS from main video path input. All fields will be read including station ID
CFG VPS SRC PDC B	Decodes PDC from main video path input. Only hour and minute field will be read
CFG VPS SRC PDC B LBL	Decodes PDC from main video path input. All fields will be read including station ID

Insertion of WSS Data

PDC

Information

The FAB Teletext Data Generator supports insertion of WSS (Wide Screen Signaling) data. The standard WSS data can be defined in the configuration program. The command CFG WSS described below can be used to reconfigure the insertion of WSS when the system is running.

Command Syntax for WSS

To configure the insertion of WSS you should use the CFG WSS command (you must login with priority 9 to be able to use this command):

SYNTAX

Available syntax.

CFG WSS mode	Defines the mode of insertion of WSS data. The word mode must be replaced by one of the following words:

OFF	Stops the insertion of WSS data and passes through the line 23
PASS	Same as OFF
ON	Starts insertion of WSS data into line 23
COPY	Copies the WSS data present on the input (see CFG WSS SRC command) and inserts the same data
BRIDGE	Same as COPY
BLANK	Erases line 23 and does not pass it though and also does not insert WSS data

CFG WSS SRC x	Defines the input source when WSS is read where x can be NONE, WSS A or WSS B defining the video input used. A is the main video input and B is the AUX video input. WSS and video index are overwritten with WSS value decoded from decoder.
CFG WSS SET x	Defines the data that should be inserted into line 23 where x can be one of the following values: BLANK, 4:3, 14:9, 14:9T , 16:9, 16:9T, >16:9 4:3P14:9 , 16:9A (should never be used in transmission)
CFG WSS 43ONLY ON	Activates a feature that will always output 4:3 in WSS data ignoring what is set in video index.
CFG WSS 43ONLY OFF	Deactivates the fixed 4:3 output in WSS.

CFG WSS 43ONLY ON x	Activates a feature that will output the 4:3 value with AFD x in WSS data in the cases when 16:9A should be output, ignoring what is set in video index. The value x is the value Active_Format explained in the ETSI TS 101 154 specification.
CFG WSS 169ONLY ON	Activates a feature that will always output 16:9 anamorphic in WSS data ignoring what is set in video index.
CFG WSS 169ONLY OFF	Deactivates the fixed 16:9 output in WSS.
CFG WSS 169AFD x	Sets the AFD value x to be used in the case when WSS reception is activated and WSS code 16:9A is received. x is an AFD value from the range 0..15.
CFG WSS SET	Returns the currently set value.

Insertion of VI / AFD Data

VIDEO INDEX

Information

The FAB Teletext Data Generator supports insertion of VI/AFD (Video Index /Active Format Description) data in SDI signal. This data is not inserted into composite video. The command CFG VIX described below can be used to reconfigure the insertion of VI when the system is running.

Command Syntax for VI

To configure the insertion of VI you should use the CFG VIX command (you must login with priority 9 to be able to use this command):

SYNTAX

Available syntax.

CFG VIX SRC WSS A	WSS and video index are overwritten with WSS value decoded from decoder on main input
CFG VIX SRC WSS B	WSS and video index are overwritten with WSS value decoded from decoder on AUX input
CFG VIX mode	Defines the mode of insertion of VI data. The word mode must be replaced by one of the following words:

OFF	Stops the insertion of VI data and passes through the data from the input
PASS	Same as OFF
ON	Starts insertion of VI data
BLANK	Inserts blank VI data

CFG VIX SET	Returns the currently set value
CFG VIX SET x	Defines the VI data that should be inserted where x can be one of the following values:

BLANK

4:3-0	16:9-0
4:3-1	16:9-1
4:3-2	16:9-2
4:3-3	16:9-3
4:3-4	16:9-4
4:3-5	16:9-5
4:3-6	16:9-6
4:3-7	16:9-7
4:3-8	16:9-8
4:3-9	16:9-9
4:3-10	16:9-10
4:3-11	16:9-11
4:3-12	16:9-12
4:3-13	16:9-13
4:3-14	16:9-14
4:3-15	16:9-15

The value a and b in 4:3-a and 16:9-b is the value Active_Format explained in the ETSI TS 101 154 specification).

Priority 9

PRIORITY 9 COMMANDS

🗀 Information

The priority 9 (this can be set for each password for people working with editing terminals) should only be used by system operators. This priority enables using some very important commands which should not be accessible to normal users like adding and deleting users, configuration of teletext decoder circuits and transmission modes.

Following are descriptions for commands that are only available when using priority 9 and also for commands which are very powerful and should therefore only be used by some users with extended knowledge.

SCK (Set Clock)

The SCK command is used to set the system clock. This can only be done when using priority 9 or priority 1.

SYNTAX

✎ Available syntax.

SCK 12:34	(Sets the system time to 12 hours, 34 minutes and 0 seconds)
SCK 12:34:56	(Sets the system time to 12 hours, 34 minutes, 56 seconds)
SCK 12:34:56W	(Sets the system time to 12:34:56 and changes to winter time - DST is off after this)
SCK 12:34:56S	(Sets the system time to 12:34:56 and changes to summer time - DST is on after this)

SDT (Set Date)

The SDT command is used to set the system date. This can only be done when using priority 9.

SYNTAX

Available syntax.

SDT dd.mm.yy	(Sets the system date where dd is day (1-31), mm is month (1-12) and yy is year (00-99))

RBT (Reboot)

The RBT command is used to reboot the Teletext Data Generator. This is only possible when using priority 9.

SYNTAX

Available syntax.

RBT username,password	(Restarts the Teletext Data Generator by rebooting the computer)

RST (Reset)

The RST command is used to restart the Teletext Data Generator. This is only possible when using priority 9 and is not recommended.

SYNTAX

Available syntax.

RST username,password	(Restarts the Teletext Data Generator without rebooting the computer)

TDC (Teletext Decoder)

The TDC command is used to select pages that should be acquired by teletext decoder in the Teletext Data Generator. Please note that this command is only available when using priority 9 and if the option FT-RTT 4 (Real Time Teletext Decoder) was bought.

There are two teletext decoder inputs available:

- TDC A: Main input (Composite or SDI). Teletext is decoded from the video signal which is connected to the main video input.

- TDC B: Aux input. Teletext is decoded from the Aux BNC input.

Only TDC A or only TDC B can be active at the same time, but not both.

Real Time Teletext Decoders

The real time teletext decoder enables reception and retransmission of teletext pages in real time.

There are 3 different modes that can be defined for each teletext page number:

- Mode 0: Ignore the received teletext page. This mode should be used for pages which should not be retransmitted.

- Mode 1: Store the received teletext page and retransmit as a normal page within the normal cycle of pages. This mode should be used for most pages. When pages with multiple subpages is received it will be stored as well and the complete set of received subpages will be retransmitted.

- Mode 2: Immediately retransmit the received page and do not store the page in the normal cycle. This mode should be used for retransmission of subtitles and interactive pages.

- Mode 3: Pages which consist of only one subpage (with subcode 0) are stored when received and retransmitted as normal pages within the normal cycle of pages. Pages which consist of multiple subpages (subcodes > 0) are retransmitted when received. This mode can be used instead of mode 1 if you have special reasons for this.

SYNTAX

Available syntax.

TDC d	Displays the list of pages that are acquired by the teletext decoder d where d represents the teletext decoder number [A-E]
TDC d ppp	Displays the list of pages that are acquired by the teletext decoder d starting with page number ppp
TDC d ON	Switches the teletext decoder d ON
TDC d OFF	Switches the teletext decoder d OFF
TDC d xxx yyyC	Adds page xxx to the list of received pages. The page will be transmitted as page yyy. The character C can be either nothing to specify mode 1, I to specify mode 2 and T to specify mode 3.
TDC d xxx yyy zzzC	Adds page interval xxx to yyy to the list of received pages. The page xxx will be transmitted in mode 1 as page zzz. The character C can be either nothing to specify mode 1, I to specify mode 2 and T to specify mode 3.
TDC d xxxR	Removes the page xxx fromthe list of received pages.
TDC d xxx yyyR	Removes the page interval xxx to yyy from the list of received pages.
TDC d DELAYINT x	Defines the delay for retransmission of pages transmitted in Mode 2 in number of fields. Define 50 for 1 second delay.
TDC d DELAYINT	Displays the currently defined delay for Mode 2.

EXAMPLES

Test by yourself

Define pages that should be acquired:

To select the page 321 to be acquired and retransmitted as page 554 use the command:

- TDC A 321 554

This command will add the page 321 to the list of pages that are acquired by the real time teletext decoder A.

To select the pages 123 to 155 to be acquired and retransmitted as pages starting with 227 use the command:

- TDC A 123 155 227

This command will add the pages 123 to 155 to the list of pages that are acquired by the teletext decoder A.

Define pages that should be retransmitted in interactive mode (Mode 2):

INTERACTIVE MODE

Test by yourself

To select the page 150 to be acquired and retransmitted in mode 2 (interactive) as page 777 use the command:

- TDC A 150 777I

This command will add the page 150 to the list of pages that are acquired by the real time teletext decoder A and retransmitted in interactive mode.

Define pages that should not be acquired:

REMOVE PAGES

Test by yourself

To select the page 321 not to be acquired any more use the command:

- TDC A 321R

This command will remove the page 321 from the list of pages that are acquired by the teletext decoder A.

To select the pages 123 to 155 not to be acquired any more use the command:

- TDC A 123 155R

This command will remove the pages 123 to 155 from the list of pages that are acquired by the teletext decoder A.

HUP (Help Update)

The HUP command is used to change help pages (only allowed when using priority 9).

SYNTAX

Available syntax.

HUP MAIN	(Changes the MAIN help page with the one that is currently on the screen of the editing terminal)

EXAMPLES

Test by yourself

HUP DIR	(Changes the help page for the command DIR with the page that is currently on the screen of the editing terminal)

USR (User)

The USR command is used to change, add and delete usercodes (passwords). Please note that this command is only available when using priority 9.

SYNTAX

Available syntax.

USR	(Displays the mask for entering new usercode)
USR xxxL	(Displays the list of users starting with the usercode xxx)
USR ADD	(Adds a new usercode with the information that is on the screen)
USR xxx	(Displays the information of the user with the usercode xxx)
USR xxxU	(Updates the information of the user with the usercode xxx. Before issuing this command USR xxx must be issued to get the user xxx information on the screen)
USR xxxD	(Erases the information of the user with the usercode xxx. Before issuing this command USR xxx must be issued to get the user xxx information on the screen. After the user information for the user xxx is deleted this user can not register to the system any more)

EXAMPLES

Test by yourself

Create a new user: Issue the command USR with no parameters. Fill in the required information. Then issue the command USR ADD.

Change user's info: Issue the command USR yyy to display the information of the user yyy. Change the required data. If you wish to keep the old password unchanged then do not type anything as password. Otherwise enter a new password and retype the password in the REPEATED field. Issue the command USR yyyU to update the information with the one on the screen.

Delete a user: Issue the command USR yyy to display the information of the user yyy. Issue the command USR yyyD to delete the user..

PASSWORD

Information

For each password you can enter the following data:

Username: The name of the user that will be using this password. There may be more users with the same username defined as long as they have different passwords.

Password: The password for the user.

Repeated: Enter the password again.

Priority:	Priority for the user. Different priorities allow using different command sets. Normally an editor that should be able to use most of the commands should use priority 1. A system operator should use priority 9 so that he will also be able to use the specific commands that are required to enter new users/passwords or change transmission features.
Low.Page:	The lowest page number that the user will be able to write to. Besides pages with page numbers the user can also use pages from the file system. To enable the user to use pages only from the file system enter as the "High.Page" 100 and as "Low.Page" 101.
High.Page:	The highest page number that the user will be able to write to.
FullRead:	Defines whether the user is allowed to read pages outside of the interval defined by "Low.Page" and "High.Page".
Hex Read:	Defines whether the user is allowed to read hex pages.
Adv.Cmds:	Defines whether the user is allowed to use advanced commands like APP with the parameter N.
Direct:	Defines whether this password is allowed to be used over direct serial line or network connections.
Modem:	Defines whether this password is allowed to be used over modem serial lines.
Init.Dir:	Defines the directory that will be made as the current directory for the user after he registers with the command REG. See the File System section for details on directories.
Callback:	It is possible to enter the telephone number to which the user can be called back. Enter the number as one word (i.e. 0231 5552036 should be entered without spaces as 02315552036). To select the modem group which should be used for callback append the group number after the telephone number seperated by a space (i.e. 02315552036 1 will select the modem group 1)

CFG (Config)

The CFG command can be used to change the mode of transmission from and editing terminal. That way the Temporary Configuration is also changed. We do not recommend to use this command once the system is operating correctly. Note that the CFG command can only be used by users with priority 9.

SYNTAX

Available syntax.

CFG VBI GET	Displays the current setup of the VBI lines when encoder board FT-HT 2 or higher is installed.
CFG VBI SET	Sets the VBI lines setup to what is currently on the screen. First issue the command CFG VBI GET and then change the VBI lines setup on the screen.
CFG VBI POS +	Moves the data position of the teletext output by one step to the right. Please use this function only when you have connected an oscilloscope to the output of the Data Generator to be able to measure the 12µs specified by the teletext specification.
CFG VBI POS -	Moves the data position of the teletext output by one step to the left. Please use this function only when you have connected an oscilloscope to the output of the Data Generator to be able to measure the 12µs specified by the teletext specification.
CFG VBI ERRPGS ON	Disables the option „Bypass when EPROM". In this case the teletext data generator will transmit static pages in case of failure.
CFG VBI ERRPGS OFF	Enables the option „Bypass when EPROM". In this case the teletext data generator will not transmit any pages in case of failure, but it will go to by-pass mode.
CFG VBI ERRPGS GET 1	Reads the first apology page that is transmitted in case of failure. The parameter 1 reads the first page, the parameter 2 reads the second page and the parameter 3 reads the third page. An error is returned if the page is disabled. In that case it should be reenabled using the command CFG VBI ERRPGS PGN.
CFG VBI ERRPGS SET 1	Stores the first apology page that is transmitted in case of failure. The parameter 1 writes the first page, the parameter 2 writes the second page and the parameter 3 writes the third page. An error is returned if the page is disabled. In that case it should be reenabled using the command CFG VBI ERRPGS PGN.

CFG VBI ERRPGS PGN 1 ppp

Sets the page number of the first apology page that is transmitted in case of failure to ppp. The parameter 1 sets the number for the first page, the parameter 2 sets the number for the second page and the parameter 3 sets the number for the third page. The three pages are sorted on ascending page number after this command. Before setting the number of other pages, verify, in which of the three positions it is stored.

CFG VBI ERRPGS PGN 1 OFF

Disables the first apology page that would be transmitted in the case of failure. The parameter 1 disables the first page, the parameter 2 disables the second page and the parameter 3 disables the third page. The three pages are sorted on ascending page number after this command. Before setting the number of other pages, verify, in which of the three positions it is stored.

CFG INC CTR	Selects incrementing counter
CFG DEC CTR	Selects decrementing counter
CFG IN SEQ	Rotating pages transmitted in sequence
CFG OUT HID	Rotating pages transmitted out of sequence hidden
CFG OUT SEQ	Rotating pages transmitted out of sequence
CFG WINTER ON	Switches on transmission of subpages according to the Winter-theory. Subpages are only transmitted in cycle if the defined display time of the currently displayed page has been reached. Otherwise the subpage will be transmitted in the next cycle. This way the cycle time can be reduced for up to 30%.
CFG WINTER OFF	Switches off transmission of subpages according to the Winter-theory.
CFG FIL SPC	Fill unused lines with SPACE
CFG FIL 831	Fill unused lines with packet 8/31
CFG NOPGFIL	Page fill mode is disabled
CFG PGFIL	Page fill mode is enabled
CFG MCT OFF	Minimum cycle time is not set
CFG MCT 1.5	Minimum cycle time is 1.5 seconds
CFG SUP OFF	No pause after subtitle header

CFG SUP ON	20ms pause after subtitle header
CFG RPT ON	Page repeated after subtitle break from beginning
CFG RPT OFF	Continue transmitting page after subtitle break
CFG HDR GET x	Displays the header row of the magazine x (1-8) in the command row. Example: CFG HDR GET 1
CFG HDR SET x	Sets the header row of the magazine x (1-8, 0=all magazines) to the current contents of the command row. Use the command CFG HDR GET x first to display the contents of the header row. Special characters and colour characters are displayed as • . Simply replace all required characters and the use the command CFG HDR SET 0 to set the new header. Please note that special characters like date / time special header entries can not be set by this command.
CFG STO GET	Displays the header row that is displayed when the command STO is used to remove a page from transmission cycle.
CFG STO SET	Sets the header row which is displayed when the command STO is used to remove a page from transmission cycle. First use the command CFG STO GET, then change the text and then use CFG STO SET. Please note that national characters are not allowed as contents of the header row.
CFG L25 ON	Switches level 2.5 transmission (objects) on.
CFG L25 OFF	Switches level 2.5 transmission (objects) off.
CFG L25 PAGE	Defines the teletext page number for transmission of POP and DRCS pages.
CFG L25 FRG ON	Enables fragmented transmission of Level 2.5 data.
CFG L25 FRG OFF	Disables fragmented transmission of Level 2.5 data.
CFG SBP GET X	Displays the X coordinate for automatic subpage numbering.
CFG SBP GET Y	Displays the Y coordinate for automatic subpage numbering.
CFG SBP GET	Displays the automatic subpage numbering mode: 0=Disabled, 1=Current/Total, 2=Total/Current

CFG SBP SET X x	Sets the X coordinate for automatic subpage numbering to the value x (must be between 0 and 34).
CFG SBP SET Y y	Sets the Y coordinate for automatic subpage numbering to the value y (must be between 0 and 23).
CFG SBP SET m	Sets the automatic subpage numbering mode to the value m: 0=Disabled, 1=Current/Total, 2=Total/Current
CFG 830 ON	Switches transmission of packet 8/30 on.
CFG 830 OFF	Switches transmission of packet 8/30 off.
CFG X24 ON	Enables transmission of packet X/24.
CFG X24 OFF	Disables transmission of packet X/24.
CFG X25 ON	Enables transmission of packet X/25.
CFG X25 OFF	Disables transmission of packet X/25.
CFG X26 ON	Enables transmission of packet X/26.
CFG X26 OFF	Disables transmission of packet X/26.
CFG X27 ON	Enables transmission of packet X/27.
CFG X27 OFF	Disables transmission of packet X/27.
CFG X28 ON	Enables transmission of packet X/28.
CFG X28 OFF	Disables transmission of packet X/28.
CFG ARC X ppp	Disables archiving of teletext page ppp (i.e. CFG ARC X 120 will disable archiving of page 120)
CFG ARC X ppp qqq	Disables archiving of teletext pages in the interval between ppp and qqq (i.e. CFG ARC X 120 125 will disable archiving of pages 120 to 125)
CFG ARC I ppp	Enables archiving of teletext page ppp (i.e. CFG ARC X 120 will enable archiving of page 120)
CFG ARC I ppp qqq	Enables archiving of teletext pages in the interval between ppp and qqq (i.e. CFG ARC X 120 125 will enable archiving of pages 120 to 125)

CFG ALARM OFF	Disables the alarm page. The page will still be transmitted but not any more at 00 seconds.
CFG ALARM ppp	Defines the page ppp as the alarm clock page. This page will be transmitted exactly at 00 seconds and it can also be used as the world time clock page.
CFG SESSTOUT x	Defines the timeout in minutes after which the terminal will be logged out automatically.
CFG SESSTOUT	Displays the timeout in minutes after which the terminal will be logged out automatically.
CFG REBOOT OFF	Disables automatic reboot of the computer if no commands are received over network for a specified number of minutes.
CFG REBOOT x	Enables automatic reboot of the computer if no commands are received over network within x minutes.

The following CFG X31 commands are only available in data generator software version 4 or higher.

CFG X31 s ON	Enables data packet stream s (1-4).
CFG X31 s OFF	Disables data packet stream s (1-4).
CFG X31 s MAXPACKETS x	Defines the number of maximum packets that will be sent in stream s (1-4) within 2 seconds (i.e. 2000).
CFG X31 s GUAPACKETS x	Defines the number of guaranteed packets that can be sent in stream s (1-4) within 2 seconds (i.e. 2000). If there is not enough spare capacity then the Teletext page transmission will be interrupted to allow transmission of data packets.
CFG X31 s MAXPERFIELD x	Defines the maximum number of packets that will be sent in stream s (1-4) within one field.
CFG WATCHDOG ON	Enables the internal watchdog which performs automatic restart if software blocks.
CFG WATCHDOG OFF	Disables the internal watchdog which performs automatic restart if software blocks.

Advanced Commands

ADVANCED COMMANDS

Information

This section describes the commands that can only be used by users that can use advanced commands (see Login Passwords for details) and consoles. Not all of them are according to WST standard and if you use them you should really know why and check that they are received correctly on all teletext decoders.

INS & APP (Insert & Append)

The INS and APP commands can normally be used also when the user is not allowed to use advanced commands. Only the following syntax can only be used by the users that can use advanced commands:

SYNTAX

Available syntax.

INS XXXn	(Same as PUT XXX and RUN XXX. On first transmission of the page the page will be transmitted without C4=erase bit set)
APP XXXn	(Appends new rows to page XXX and executes RUN XXX. On first transmission of the page the page will be transmitted without C4=erase bit set)

EXAMPLES

Test by yourself

INS 235N	(Inserts the page 235 without C4=erase bit set. This is only possible with non-rotating pages. It is in responsibility of the editor to take care that all rows which were present on the old page are also present on the new page to prevent mixing of old and new page. Do not use this command with less rows on the page than necessary as all non present rows (in the new page) will be erased on the screen in following transmissions of page even if they were present on the old page and not in the new)
APP 235N	(Appends new lines from the screen to page 235 and inserts the page 235 without C4=erase bit set. This is only possible with non-rotating pages)

830 (Packet 8/30)

The command 830 can only be used by the user that can use advanced commands. It allows changing of entries in the packets 8/30/1 and 8/30/2.

SYNTAX

Available syntax.

830 TX max20characters	(Changes the current Packet 8/30 to the text specified in the line. The text is also stored in temporary configuration and will be used also if the system is restarted until changed with command 830 or in CONFIG program)

EXAMPLES

Test by yourself

830 TX CHANNEL Name	(Changes the current Packet 8/30 to the text CHANNEL Name. The text is also stored in temporary configuration and will be used also if the system is restarted until changed with command 830 or in CONFIG program)
830 ID NetID	(Changes the current Packet 8/30 network identification code to the NetID (Hexadecimal value between 0000 and FFFF). Please contact EBU (www.ebu.ch) to get a unique network identification code for your channel.

SIP (Single Insert Page)

The command SIP can only be used by the user that can use advanced commands. It allows single transmission of page without putting that page into normal transmission cycle with command INS or RUN. The page is not stored in the archive or anywhere on the disk but is only transmitted once.

SYNTAX

✎ Available syntax.

SIP ppp	(Transmits page with the number ppp once with erase (C4) bit set)
SIP pppN	(Transmits page with the number ppp once with erase (C4) bit cleared)
SIP ppp.ssss	(Transmits page with the number ppp and subpage number ssss once with erase (C4) bit set)
SIP ppp.ssssN	(Transmits page with the number ppp and subpage number ssss once with erase (C4) bit cleared)
SIP ppp cccc	(Transmits page with the number ppp once with erase (C4) bit set. Transmits header with page number ppp and subcode cccc with erase (C4) bit set immediatelly after transmission of page)
SIP pppN cccc	(Transmits page with the number ppp once with erase (C4) bit cleared. Transmits header with page number ppp and subcode cccc with erase (C4) bit set immediatelly after transmission of page)
SIP ppp.ssss cccc	(Transmits page with the number ppp and subpage number ssss once with erase (C4) bit set. Transmits header with page number ppp and subcode cccc with erase (C4) bit set immediatelly after transmission of page)
SIP ppp.ssssN cccc	(Transmits page with the number ppp and subpage number ssss once with erase (C4) bit cleared. Transmits header with page number ppp and subcode cccc with erase (C4) bit set immediatelly after transmission of page)

I31 (Insert packet 31)

The command I31 can only be used by the user that can use advanced commands. It allows transmission of packets 31 for data broadcast applications. The Teletext page that is provided must contain 8-bit data. Every line of the Teletext page will be transmitted as a packet 31 line in the VBI. In version 4 of the data generator software spare capacity after the header will be used to transmit the packets. Please check the command CFG X31 to find out about parameters for transmission of packets 31.

SYNTAX

✎ Available syntax.

I31 p	(Transmits the packets present on the Teletext page as packets p/31)
I31 p s	(Transmits the packets present on the Teletext page as packets p/31 within data stream s)

EXAMPLES

💻 Test by yourself

I31 8	(Transmits the packets present on the Teletext page as packets 8/31)
I31 4 2	(Transmits the packets present on the Teletext page as packets 4/31 within data stream 2)

I30 (Insert packet 30)

The command I30 works exactly the same as I31 just that it transmits packets 30 instead of packets 31.

DGUtils.exe Program

DGUTILS.EXE PROGRAM

🗀 Information

The program DGUtils.exe is provided as part of the software update for the Data Generator. This program can be executed and Windows from the command line and will connect to the Data Generator and perform actions like setting the time/date, read pages and store them as backup on the local hard disk and transfer a clock or software update file to the Data Generator.

DGUtils.exe Program Parameters

The DGUtils.exe program can be started from command line under Windows with certain parameters. The first parameter always specifies the ip address of the Data Generator, optionally the port number and one or more commands that will be executed:

```
DGUTILS ipaddr[:port]:command
```

If :port is not specified then the default port 8367 will be used automatically.

Several commands can be specified at the same time. The available commands are:

Read pages from the Data Generator

This command will read all pages with page numbers, all page masks and also all pages from all directories and store them in ETP format on the local hard disk.

Syntax: DGUTILS ipaddr:GET /LOGIN=user,password [/FOLDER=folder] [/PAGES=interval]

Example: DGUTILS 192.168.0.5:GET /LOGIN=9,9 /FOLDER=C:\Pages /PAGES=100,120-149

The parameters /FOLDER and /PAGES are optional and do not have to be specified. When the parameter /PAGES is specified the pages from directories will not be read.

The pages with page numbers will be read with commands GET, GEM and GER and will be stored accordingly with names Pxxx.etp, Mxxx.etp and Rxxx.etp. Pages from directories will be read with the command GET and will be stored under the directory name root of the specified folder.

Set date and time of the Data Generator

This command will read the date and time on the Windows PC and set the same date and time on the Data Generator.

Syntax: DGUTILS ipaddr:SCK /LOGIN=user,password

Example: DGUTILS 192.168.0.5:SCK /LOGIN=9,9

Send a file to the Data Generator

This command will send a file to the Data Generator. If the file contains a software or firmware update then it will be installed on the Data Generator.

Syntax: DGUTILS ipaddr:SNF /LOGIN=user,password /FILE=filename

Example: DGUTILS 192.168.0.5:SNF /LOGIN=9,9 /FILE=CLOCK.CLK

Send a teletext page to the Data Generator

This command will send a file with a teletexte page to the Data Generator. The file must be in a valid file format of a teletexte page. The Data Generator will store the page with the specified page and subpage number.

Syntax: DGUTILS ipaddr:SNP /LOGIN=user,password /FILE=filename /PAGENO=ppp.s

Example: DGUTILS 192.168.0.5:SNP /LOGIN=9,9 /FILE=Page.etp /PAGENO=100.1

Send a command to the Data Generator

This command will send any command to the Data Generator. The Data Generator will execute the command.

Syntax: DGUTILS ipaddr:SNC /LOGIN=user,password "/CMD=DEL 100.2"

Example: DGUTILS 192.168.0.5:SNC /LOGIN=9,9 "/CMD=TRU 100.1R"

Read backup ZIP file from the data generator

This command will download the ZIP file from the Data Generator which contains the backup of all files on the hard disk of the data generator except for archived teletext pages.

Syntax: DGUTILS ipaddr:RB /LOGIN=user,password /FOLDER=folder

Example: DGUTILS 192.168.0.5:RB /LOGIN=9,9 /FOLDER=C:\FAB

This will download the file BACKUP4.ZIP to the folder C:\FAB. If you send this file back to the data generator then all files contained in the ZIP file will be unpacked to C:\ and subfolders which will restore the previous state. The data generator will boot automatically after unpacking the ZIP file. Please note that sending the ZIP file to the data generator is extremely dangerous because if the data contained in the ZIP file is not correct for this data generator it may happen that the data generator will not function correctly any more after booting.

Error and OK Messages

The Error and OK Messages of the FAB Teletext Data Generator FT-DGS 4

MESSAGES

🗁 Information

The following messages can occur when trying to execute a command from the Editing Terminal:

OK Messages

OK MESSAGES

🗁 Information

OK	The command has been executed successfully.
OK-MSG-TYPE RMS	The command has been executed but there is a message waiting for you. Type RMS to read the message.
MORE-TYPE RMS	There is another message waiting. Type RMS to read it.
PAGE STOPPED	The STO command has been executed successfully.
PAGE TRUNCATED	The TRU command has been executed successfully.
PAGE TIMED	The TIM command has been executed successfully.
FAST OK	The FAS command has been executed successfully.
PAGE COPIED	The COP command has been executed successfully.
PAGE INSERTED	The INS command has been executed successfully.
PAGE RUN	The RUN command has been executed successfully.
PAGE GOT-ERASED	The RTR command has been executed successfully.
PASSWORD OK	The PAS command has been executed successfully.
PAGE DELETED	The DEL command has been executed successfully.
DIRECT ACC. OK	The DAC command has been executed successfully.
PAGE PUT	The PUT command has been executed successfully.
REGISTERED	The REG command has been executed successfully.

Error Messages

ERROR MESSAGES

🗀 Information

OFF LINE	The Data Generator is not ready to execute any commands. It is possibly still checking the pages after a restart. If this is not the case then the Data Generator is not running the Teletext Transmission Program any more. Reset the Teletext Data Generator.
E1-Can not RUN	The system memory is full and no more pages can be transmitted. Stop transmitting some of the pages (STO command) or install additional memory.
E2-Can not RUN	Not more than 4096 pages can be transmitted. Stop transmitting some of the pages.
E3-Already run.	Appears when using the TOP command and trying to define a page that is currently being transmitted as a subtitle page. Stop transmitting that page and reissue the command.
E5-No Help	Appears when issuing the HLP command with another command appended (i.e. HLP PETER) and there is no help available for that command.
E6-No message	Appears when using the RMS command and there is no message available.
E7-Not allowed	Appears when trying to access the pages you are not allowed to. This can be changed by the system operator in the password list.
E8-DISK FULL	Appears when trying to store a page to the Data Generator´s hard disk and there is no space for it.
E11-Bad pgno	Appears when the page number is not specified correctly.
E12-Bad spg	Appears when the subpage number is not specified correctly.
E13-Bad cmd	Appears when the command specified does not exist or can not be used before you register or your priority is not high enough to be able to use it.
E14-Bad user cd	Appears when using the UCD command and the user code is not specified correctly.
E15-No user	Appears when using the UCD command and no user has the specified user code.
E16-Bad STO	Appears when trying to stop transmitting a single subpage of a page. This is not possible. Only the whole page can be stopped.
E17-Not On Air	Appears when trying to stop transmitting a page that is currently not being transmitted.
E18-Can not STO	Appears when trying to stop transmitting the only page that is currently being transmitted. This is not possible. At any time at least one page has to be transmitted.
E21-No spg spec	Appears when issuing the GET command without specifying the subpage of the page and the page consists of more than one subpages. Use the GET XXX.XX command.

E22-Spg n.ex.	Appears when trying to GET a subpage that does not exist.
E23-Page n.ex.	Appears when trying to GET a page that does not exist.
E24-No more pgs	Appears when issuing the GET or GET . command and there are no more pages on the disk.
E25-Wrt.Protect	Appears when trying to write a page that is write protected by the command WPR.
E26-Spg too big	Appears when using the TIM XXX.XX YY command and the subpage XX does not exist.
E27-Bad Time	Appears when using the TIM command and trying to define the display time of a page that is shorter than 3 seconds or longer than 60 seconds. The display time of the page can only be between 3 and 60 seconds.
E28-Page n.ex.	Appears when using the TIM command and the specified page does not exist.
E31-Already fas	Appears when trying to define a page as fast rotating by using the FAS command and the page is already in the list of fast rotating pages.
E32-Not fast	Appears when trying to remove the page from the list of fast rotating pages by the FAS command and the page is not in the list.
E33-Bad param	Appears when trying to use a command with a parameter without any function (i.e. FAS 100p).
E34-Too man.fas	Appears when trying to add a page to the list of fast rotating pages and there are already 16 pages in the list of fast rotating pages. Not more than 16 pages can be selected as fast rotating.
E35-Bad Syspgno	Appears when using the TMC command and the contents of the page is not OK.
E41-Bad dst pgn	Appears when trying to copy a page. The destination page number is not correct.
E42-Src pg.n.ex	Appears when trying to copy a page and the source page does not exist.
E43-Dst pg ex.	Appears when trying to copy a page and the destination page exists. It can only be overwritten by specifying the D parameter. See COP command.
E44-Bad suffix	Appears when trying to copy a page and the parameter specified does not have any function.
E45-Too man spg	Appears when trying to append a page to another page and the destination page number would consist of more than 8191 subpages after the command would be executed. The page can consist of a maximum of 8191 subpages.
E46-Can not rot	Appears when trying to make the Alarm Clock Page rotating by using the COP command. The Alarm Clock Page can not consist of more than one subpage.

E47-Bad src pgn	Appears when trying to copy a page. The source page number is not correct.
E48-Can not run	Appears when trying to start transmitting the page by using the INS command and the page can not be transmitted because the magazine it is stored in can not be transmitted or you can not access the page. Only the system operator can change this.
E51-Page n.ex.	Appears when trying to start transmitting the page by using the RUN command. The specified page does not exist.
E52-Can not Run	Appears when trying to start transmitting the page by using the RUN command and the page can not be transmitted because the magazine it is in can not be transmitted or you can not access the page. Only the system operator can change this.
E53-Bad RUN	Appears when trying to start transmitting one subpage of a rotating page using the RUN command. This is not possible. Only the whole page can be transmitted.
E54-DISK ERROR	Appears when a disk error occurs during execution of a command on the Data Generator.
E55-Too man pag	Appears when trying to save a page by using the SAV command and there are already 115 pages saved on the Data Generator´s hard disk. It is not possible to save more than 115 pages to the Data Generator´s hard disk by using the SAV command.
E56-Page exists	Appears when trying to save a page by using the SAV command and a page with the same name is already saved on the Data Generator´s hard disk. Specify a different name.
E57-Page n.ex.	Appears when trying to retrieve a page by using the RTR command and the page with the specified name does not exist.
E58-Bad Name	Appears when using SAV or RTR commands and the name specified does not consist only of characters. Only characters "A" to "Z", "a" to "z" and digits can be used.
E62-Wrong Prio.	Appears when trying to execute a command that is not allowed to be executed with the current priority.
E63-REG FIRST !	Appears when trying to execute a command that requires the user to be registered and the user is not registered.
E64-Pass.not OK	Appears when using PAS or USR commands. Try specifying another password as not all passwords are allowed. Only characters "A" to "Z", "a" to "z" and digits can be used.
E65-Bad Data	Appears when using USR command. The data in the fields PRIORITY, LOWPAGE or HIGHPAGE is not correct.
E66-Bad Repeat	Appears when using PAS and USR commands. The password is not repeated correctly.
E67-Bad Passwrd	Appears when using PAS and USR commands. The password is not correct. Only characters "A" to "Z", "a" to "z" and digits can be used.

E68-Bad Name	Appears when using PAS and USR commands. The username is not correct. Only characters "A" to "Z", "a" to "z" and digits can be used.
E71-Spg not spc	Appears when trying to delete a page by using the DEL command and you specified a page with no subpage but that page consists of more than one subpage. Specify the subpage you want to delete.
E72-Spg n.ex.	Appears when trying to delete a subpage but the specified subpage does not exist.
E73-Page n.ex.	Appears when trying to delete a page but the specified page does not exist.
E74-Bad suffix	Appears when using the DEL command and specifying a parameter with no function.
E75-Already dac	Appears when trying to add a page to the list of direct access pages and the page is already in the list.
E76-Not d.acc.	Appears when trying to remove a page from the list of direct access pages and it is not in the list.
E78-Too man.dac	Appears when trying to add a page to the list of direct access pages but there are already 15 pages in the list. Not more than 15 pages can be in the list of direct access pages.
E81-Too man.spg	Appears when trying to append a subpage to a page by using the PUT or INS commands and the page already consists of 99 subpages. A page can not consist of more than 99 subpages.
E82-Too big spg	Appears when trying to store a page to the Data Generator´s hard disk by using the PUT or INS commands but the subpage specified is too high. The subpage specified can only be one higher than the number of subpages of the page.
E83-Page n.ex.	Appears when trying to store a subpage to the Data Generator´s hard disk and the specified page does not exist. Store the page without specifying the subpage.
E84-Can not rot	Appears when trying to make the Alarm Clock page rotating by using the PUT or INS commands. The Alarm Clock page can not consist of more than one subpage.
E85-Spg not spc	Appears when trying to store a page to the Data Generator´s hard disk by using the PUT or INS commands without specifying the subpage and the specified page consists of more than one subpage. Specify the subpage you want to store.
E86-Bad param	Appears when trying to specify a parameter with no function at any command.
E87-Not allowed	Appears when trying to access a page and the current priority and lowest and highest page setting will not allow it.
E88-Bad Date	Appears when specifying wrong date when using the SDT command.
E91-No more	Appears when using the ARC command and there are no more pages to be listed in the archive.

E93-Too big Idx	Appears when using the ARC XXXX command and the page with index XXXX does not exist in the archive.
E94-Bad Idx	Appears when using the ARC XXXX command and the index number is not correct.
E95-No Archive	Appears when trying to access the archive and there are no pages on the selected day in archive.
E96-No pass	Appears when trying to register by the REG command and the specified name and password are not in the password list. The password list can only be changed by the system operator.
E97-Bad table	Appears when trying to use the SHO command and the parameter specified is not 0, 1 or 2.
E104-Dir.n.fnd.	Appears when trying to access directory that does not exist.
E105-Dir.n.empt	Appears when trying to remove a directory with the command RMD and the directory is not empty.
E106-Acc.denied	Appears when trying to access a directory and the Read and / or Write Priorities set for that directory will not allow it.
E107-Page ex.	Appears when trying to create a page in the directory with a name that already exists in the directory.
E108-Bad TDC	Appears when specifying a wrong decoder number when using the TDC command.

Chapter 8

Editing Terminal

The integrated editing terminal software of the FAB Teletext Data Generator FT-DGS 4

General Description

EDITING TERMINAL

🗀 Information

A Teletext Editing Terminal is implemented in the transmission software. To start the Editing Terminal type TERM at the state where you could normally type QUIT or UTIL. Please note that commands from external editing terminals are still executed even if you are typing text and using the internal teletext editing terminal.

To exit the Editing Terminal part of the transmission software type the command .EXIT in the command line (the bottom line in the editor) and the normal operation screen will be displayed again. Please note that the Editing Terminal part of the software is automatically quit when the cursor is in the command line or in the page area (but not when any menu is displayed) and no key on the keyboard is pressed for few hours.

Each time you start the Editing Terminal you get in a state where you are not yet registered. So to be able to use the system you will have to register by using the command REG in the command line. Please consult the user manual for details.

Configuration

The configuration screen is displayed the first time the Editing Terminal is started and enables setting a few operation parameters. You can also change the configuration parameters later by using the local command .CONF or .CONFIG in the command line.

Following parameters can be set:

CCT Display Mode

Recommended: No

Enabling this setting will disable full screen display of teletext page. The page will be displayed with the characters exactly the same as by a normal TV teletext decoder. To switch between the two modes of display use the local command .SWITCH.

Disable FLASH

Recommended: No

If your monitor has problems with synchronization when Editing Terminal is running, enable this setting. This way the flashing characters will be displayed steady.

Save Pages On Exit

Recommended: Yes

When this setting is enabled, all local pages will be stored in the file ETT.PGS in the current directory when leaving Editing Terminal. When the editing Terminal is started the next time, the same pages will be loaded

Disp. Phone Numbers

This setting has no effect in the integrated version of the editing terminal but only in the standalone version which is available separately.

X/24 + X/27

Recommended: Yes

When this setting is enabled, the terminal will enable editing of FASTEXT (also called FLOF, which is transmitted in Packets X/24 and X/26). This setting should always be enabled.

Keyboard Driver

Simply use the arrow up and down keys to select the correct keyboard driver for your keyboard. This setting will not select the character set that you wish to use for teletext editing. Any character set for teletext editing can be selected during editing of teletext page not depending on the keyboard driver that is used.

Select the correct keyboard driver for your type of keyboard. There may be more than one driver available for your keyboard. In such a case try all of them out to find the correct one. You can change between different keyboard drivers by typing the local command .KBD on the command line. See section Local Commands for details. Following keyboard drivers are available:

Driver	Description
B	**Belgian**
CZ	**Czech**
D	**German with CAPS LOCK**
D1	**German with SHIFT LOCK**
DK	**Danish**
DK1	**Danish with characters available in the national option only**
E	**Spanish**
F	**French**
FR	**Faroese**
GB	**United Kingdom**
HR	**Croat**
N	**Norwegian**
N1	**Norwegian with characters available in national option only**
P	**Portuguese**
PL	**Polish**
PL1	**Polish for FAB Teletext Keyboard**
PL2	**Polish for programmer's keyboard**
S	**Swedish**
S1	**Swedish with characters available in national option only**
SLO	**Slovene**
SQ	**Slovak**
US	**USA**

There may be additional drivers available.

Default Character Set

Select the character set that should be set when a page is cleared when the local command .CLR is used. This setting will not select the character set for all pages. The character set for each teletext page can be selected during editing of the page.

Operation

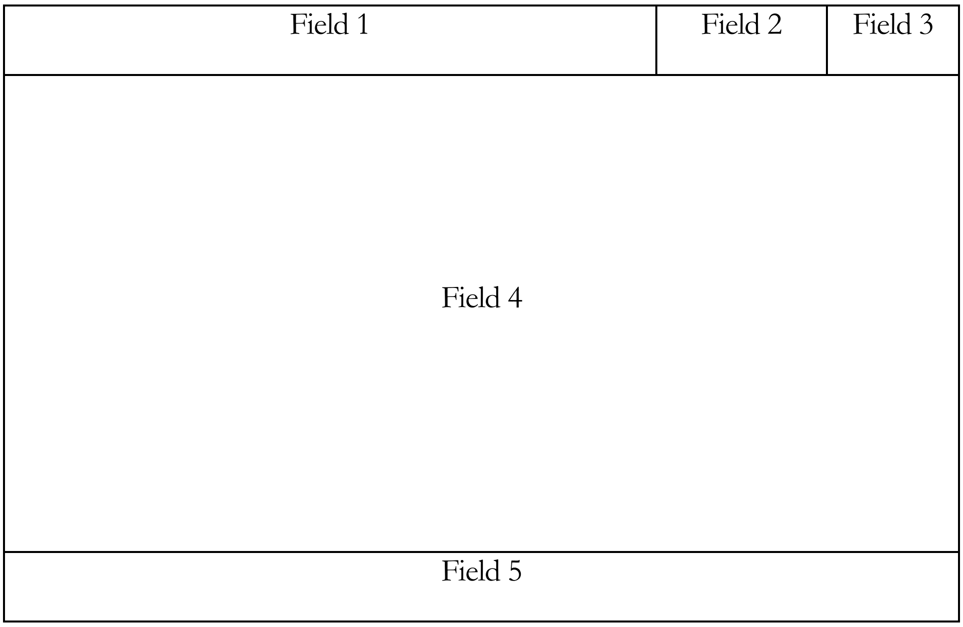
Screen Display

SCREEN DISPLAY

💻 Test by yourself

The display consists of 25 rows of 40 columns.

It is divided into areas shown below:



Field 1

Page name and page number

Name of the page is defined using the command NAM. Page number is always updated automatically.

Field 2

Local page number

The Editing Terminal can store up to 20 pages numbered 1 to 20. Local page is selected using PgUp (next page) and PgDn (previous page) keys. Consider that the contents of local pages can be lost when you exit the program. See "Configuration" section for details.

Field 3

Editing character set

The letters in this field define which characters from national character sets can be used on this page. The following character sets can be selected:

Character Set	Description
GB	**English**
D	**German**
S	**Swedish**
E	**Spanish**
I	**Italian**
F	**French**
CS	**Czech / Slovak**
PL	**Polish**

The character set is selected by pressing SHIFT and CHAR.SET. keys simultaneously on the enhanced teletext keyboards or pressing ALT-E and H on other keyboard.

Field 4

Teletext page

This is the area where the text can be edited. Page contains 23 rows of 40 columns. Active editing area can be reduced using margins.

Field 5

Command line / Status line

The cursor is moved to this line or returned to teletext page using ESC key. It is also possible to enter the teletext page by pressing arrow up or down keys. When the cursor is present in the command line, the commands for the teletext data generator can be issued (GET, PUT, INS...). When the cursor is in the teletext page, this line shows editing status data:

ROW : COL	Row and column of the cursor
INS	Insert mode
Clr	Automatic colour
Wrp	Word wrap
Rev	Reveal

Use of the Keyboard

USING THE KEYBOARD

🖳 Test by yourself

You may either use a normal PC keyboard or the enhanced teletext keyboard which can be supplied by FAB.

The keyboard is divided into 4 areas. The main part contains alphanumeric keys. The two keys aside of the alphanumeric keys marked with arrow showing up are called SHIFT. Pressing SHIFT and another key simultaneously selects upper case character or the function described on the upper part of the key. The key on the left marked with arrow showing down is called CAPS LOCK. It toggles the use of capital characters.

Function keys F1 to F9 (on the left side of the enhanced teletext keyboard or on the top of the normal PC keyboard) are used for editing graphic symbols and selecting page parameters.

Special function keys, which are available only on the top of the enhanced teletext keyboard (they are not available on the normal PC Keyboard) are used for selecting editing functions and attributes. When a special function key is pressed together with SHIFT, the function marked on the upper part of the key is invoked.

All the teletext attributes and editing functions can be also reached by selecting topics in pull-down menus. The menus are invoked by pressing F10 key or a menu can be entered directly by pressing ALT and the highlighted key during editing of the page. Moving through menus is achieved using the arrow keys. ESC key closes a menu level. Topics can be selected directly by pressing the highlighted key in any menu.

The numeric keyboard on the right side can be used in two different modes. When the NumLock light is off, the keyboard enables moving cursor. When the NumLock light is on, the keys will act as numbers. Mode of operation is changed using NumLock key.

Keys between the alphanumeric part and the numeric keyboard are used for moving the cursor independent of the state of NumLock light.

For selection of some functions, pressing ALT or CONTROL key simultaneously with another key is used. These functions are described later in this manual.

To enter the codes from the ETT character code table directly follow the procedure:

be sure to have NumLock switched on.

hold the left ALT key pressed and type the code on the numeric keypad

The Command Line

COMMAND LINE

🖳 Test by yourself

The command line can be entered or exited by pressing the ESC key. It is also possible to enter the teletext page by pressing arrow up or down keys. All the characters typed are inserted into existing text. The comma (,) character is replaced with conceal character to enable invisible entering of password. Beside letters, numbers, point (.) and comma (,), the following function can be used in the command line:

RETURN (or ENTER or Control+RETURN)

sends the command to the teletext data generator. After completion of the command the status message is displayed at the right half of the command line. Successfully executed commands return cyan coloured status message, unsuccessfully executed commands return red coloured status message. If the communication to the data generator is not functioning or is disturbed, the yellow TIMEOUT message will be displayed. When the first key pressed after execution of the command is letter or number, the command line will be erased. Pressing any other key (Del, arrows, End, ESC...) will leave the command line unchanged.

Keys on the keyboard

IMPORTANT KEYS

🖳 Test by yourself

Right arrow moves cursor right.

Left arrow moves cursor left.

HOME moves cursor to beginning of the line.

END moves cursor to end of line.

DEL deletes the character below cursor and moves the following characters one place left.

BACK SPACE (left arrow key above the RETURN key) deletes the character left of cursor.

SHIFT + RETURN deletes whole command line.

PgUp changes to the next local page.

PgDn changes to the previous local page.

Editing Functions

WORD WRAP

Test by yourself

WORD WRAP

(ALT-E + W)

This key selects word wrap to occur or not. Wrp message in the status line shows that word wrap is switched on. The message Clr aside of the Wrp message shows that automatic colour selection is switched on. The automatic colour selection function will repeat the colour select character on the start of the next line if word wrap occurs. Use of both functions is recommended when writing texts. If the word typed is to long to fit into the line, it will be moved to next line together with cursor.

Another function is switched on when using word wrap. That is reverse wrap. It is invoked when deleting characters with DELETE or BACK SPACE keys. The editor tries to move the first word in the line to the space that was made after delete operation at the end of previous line. The reverse wrap also becomes operational when a space is inserted into the first word in the line. If the new word to the left of space is short enough to fit at the end of previous line it will be moved to that place. The operation is continued to the end of page.

It is important to understand the way editor is deciding what makes a word so that word wrap occurs when it is expected. Start and end of the word is marked by spaces. End of word can also be marked by:

- ! , . / * +

If the last character in the line is the last character of the word and you type the space, the space will not show. This does not mean that you should not type the space. If the space is not typed, the editor will consider the next character as part of the same word and wrap will occur.

Send Command

Control + RETURN

CTRL+ RETURN

Test by yourself

sends the command that is currently in the command line and can not be seen during editing of page to the teletext data generator. After execution the cursor will stay at the same place it was before execution. This function is intended for fast transmission of page that is changed often. Example: Ski racing results are to be written on the page 284. Write INS 284 in the command line. Then change to editor using the ESC key. When the first contestant finishes race, the time and position should be entered. Then press Control + RETURN. The command in command line will be executed (INS 284) and the viewers can immediately see the updated page. Attention: Using this command is dangerous as you can not see which command will be executed. It can happen that the page is written to wrong place (if wrong INS or PUT command was written in the command line) or a page can be deleted (command DEL in the command line). Use this function only when you are sure which command was written in the command line. Local commands can not be executed this way.

DOUBLE SCREEN

(ALT-D + D)

DOUBLE SCREEN

Test by yourself

splits screen into two areas. The page that was displayed before using this function is shown on the left half of the screen. Next local page is displayed on the right half of the screen. Cursor can be moved between the two areas using the CHANGE SCREEN key. Return to normal editing with single page displayed on screen is done by using DOUBLE SCREEN key again.

CHANGE SCREEN (CTRL-TAB or ALT-D + C)

moves cursor between the two editing areas when the DOUBLE SCREEN function is activated.

RETURN moves cursor to beginning of the next line.

SHIFT RETURN deletes characters to end of line and moves cursor to start of next line.

PgUp changes to next local page.

PgDn changes to previous local page.

INSERT This key invokes insert or overwrite mode. All the characters typed in insert mode are inserted into existing text. State of this function is displayed in the status line.

Cursor can be moved using the arrow keys or the numeric keyboard.

HOME moves cursor to beginning of line.

CONTROL HOME moves cursor to upper left margin.

END moves cursor right of the last character of line.

CONTROL END moves cursor to lower right margin.

BACKSPACE (left arrow key above the RETURN key) deletes the character left of cursor.

DELETE LINE (CTRL-Y or ALT-E + D) deletes line containing cursor. All following lines are moved upwards.

INSERT LINE (CTRL-M or ALT-E + I) inserts blank line and moves following lines downwards.

CONTROL N moves characters following the cursor to start of the next line.

DELETE deletes the character at the cursor place and moves following characters to the left.

CHAR SET (ALT-E + H) selects editing character set and special characters that may be used. The key should be pressed that often that the language desired is shown.

CHANGE CASE (CTRL-U) changes lower case characters from cursor to the end of the word into upper case and upper case characters into lower case. Cursor is moved to the beginning of next word.

DELETE WORD (CTRL-T) deletes characters to the end of word where the cursor is

PAGE PARAMETERS

(ALT-D + P)

PAGE PARAMETERS

Test by yourself

This key selects special menu that enables selection of transmitting mode for the page being edited. The same key returns to editor. Typing the number in this menu defines the time for display of page in seconds. At rotating pages the time for display will normally be longer than the time selected because the rotating pages are rotated only when they are transmitted in the sequence. The real display time will be a multiple of the time needed to transmit the whole sequence of pages. Example: Cycle time = 12 sec., selected time = 20 sec. The display time will be 24 sec. (2 x 12 > 20). Some pages can be rotated on exact times. These pages are selected using the command FAS on the teletext data generator. At non rotating pages the time selected is of importance only if the page is in the list of more frequently transmitted pages (command FAS). These pages are transmitted in exact intervals and enable the viewer fast access to information. Normally the newsflash, main index and news indexes are transmitted this way.

Using the function keys F1 to F5 in this menu special options are selected. The option selected is displayed green on the screen. The other possible choices are displayed yellow.

Possible choices:

Delete ON	teletext decoder erases page at every reception (used for test purposes only)
Delete OFF	teletext decoder does not delete the page at the reception of new page (to be used for changing only parts of page - changing messages in main index page). This function also disables numbering of the rotating page (1/2) in the upper right part of page.
Delete Normal	teletext decoder deletes the old page only when the content is changed.
TEXT	page is not subtitle or newsflash.
SUBTITLE	page is subtitle. Only boxed information will be shown.

NEWS FLASH	page is newsflash. Only boxed text will be shown.
Header ON	decoder shows header line.
Header OFF	header line is not shown on the decoder (used on graphic pages).
Hidden Page ON	page number will not be shown in sequence (green changing numbers in header line) when waiting for page.
Hidden Page Off	page number is normally shown in sequence.
Display ON	page contents will be shown.
Display OFF	page contents will not be shown (used for transmitting computer data).

LINKS (FASTEXT)

(ALT-D + L.)

FASTEXT

Test by yourself

This function enables definition of pages that a decoder having FASTEXT or FLOF function will automatically acquire and save to memory. They can be called by viewer using the 4 coloured keys and the index key. Numbers are selected by pressing appropriate keys.

Cursor can be moved using arrow keys. If subpage is not to be defined press X key when the cursor is at subpage position. The first four links define pages for the coloured keys, the fifth is unused but may be used by some decoders to acquire page and shall be therefore allocated a page number as well. Index link defines the page that will be displayed when INDEX key is pressed on the remote control.

In the coloured line at the bottom of the page short descriptions for the pages defined should be entered. This line will be shown on some decoders to tell the viewer which page can be accessed by certain keys. Insert and overwrite modes as well as delete and back space functions are available when editing this line. Field lengths can be changed by typing longer text and then pressing new colour, new background and black colour keys. Coloured texts on black background can also be used instead. This enables longer descriptions.

CONTROL + right arrow moves cursor to beginning of next word.

CONTROL + left arrow moves cursor to beginning of previous word.

The function keys are used for graphic editing:

F1 - toggles left upper part of graphic character

F2 - toggles right upper part of graphic character

F3 - toggles left middle part of graphic character

F4 - toggles right middle part of graphic character

F5 - toggles left lower part of graphic character

F6 - toggles right lower part of graphic character

F7 - writes full graphic character to the screen

F8 - inverts graphic character

F9 - writes (repeats) graphic character to the screen

F10 - Enters the menu for selection of special functions. The other possibility to enter the menu is pressing ALT and one of the highlighted letters of the top menu words.

CONTROL + arrow up moves line containing the cursor upwards.

CONTROL + arrow down moves line containing the cursor downwards.

CENTER (ALT-E + C) centers the text in line.

REVEAL (ALT-D + R) reveals characters that were hidden by function conceal. This state is terminated by pressing REVEAL key again.

Page Margins

PAGE MARGINS

Test by yourself

All the editing functions operate in the part of page within margins that can be defined. Margins are defined by moving the cursor to the place of desired margin and pressing ALT + arrow key for direction of margin (left arrow for left margin) simultaneously. ALT + HOME defines left upper margin. ALT + END defines lower right margin. Minimum height and width is 2.

CLEAR MARGINS key (ALT-E + L) extends margins to the whole screen (23 x 40). All margins take effect until releasing the editor using the ESC key. If you wish to use the same margins later you can save them using SET MARGINS key (ALT-E + S).

Attributes

ATRIBUTES

Test by yourself

Every attribute takes a place of one character in teletext page. It is normally shown as space. To display the attributes on the page press SHIFT + DISP. ATTR (CTRL+D). To switch the display of the attributes off press SHIFT + DISP. ATTR. (CTRL+D) again. The attributes are selected using the special function keys at the top of the enhanced teletext keyboard or selecting them from the menu, which is invoked by pressing F10.

On the enhanced teletext keyboard the eight coloured keys at the left select colour for characters. Before selecting black colour any other (blue or red) colour should be used because some teletext decoders are not capable of displaying black colour. On normal keyboards the character color can be selected by pressing ALT-A and selecting one of the colours. Do not use new background key to switch to black background but always use black background key for that purpose.

If the coloured key is pressed together with SHIFT, the characters that follow will be graphic characters (upper case alphanumeric characters are still available). On normal keyboards graphic character colour can be selected by pressing ALT-G and selecting one of the colours.

FLASH (ALT-C + F) - characters that follow will flash

STEADY (ALT-C + T) - characters that follow will not flash

CONCEAL (ALT-C + C) - characters that follow will be hidden. A viewer can display them using special key on the remote control. Conceal function is terminated using the colour attribute.

DOUBLE HEIGHT (ALT-C + D) - characters that follow will be displayed in double height. Characters in the next line will disappear.

NORMAL HEIGHT (ALT-C + N) - following characters will be displayed in normal height

NEW BACKGROUND (ALT-C + W) - background colour is changed to the current character colour to the end of line

BLACK BACKGROUND (ALT-C + K) - background is changed to black to end of line

CONT. GRAPH. (ALT-C + O) - graphic characters that follow will be contiguous

SEPAR. GRAPH. (ALT-C + P) - graphic characters that follow will be separated

HOLD ON (ALT-C + H) - enables function that repeats the last graphic character on the place of attribute. This enables change of colour without display of space.

HOLD OFF (ALT-C + L) - disables the HOLD function

BOX ON (ALT-C + S) - start of box for newsflash or subtitle. If the page is shown mixed with TV picture, the text that follows will be boxed. To start box this character should be used twice. Box starts between both characters.

BOX OFF (ALT-C + E) - box terminates at end of this character.

Block Movement

BLOCK MOVEMENT

Test by yourself

Block movement is another possibility to move parts of page (blocks) to another place on the page or even to another page. Since this function requires quite some key presses let us remind you that there is more simple way of moving lines only that was already described. For that simply move the cursor to the line you wish to move and press CTRL and the arrow up or down key.

Block movement function consists of two parts. First the block that should be moved must be marked. When this is done there are more possibilities. The marked block can be stored in memory or immediately moved or copied to another place on the page.

The block movement functions can be accessed in the Edit menu by pressing ALT-E when editing the page. Then there are two options that can be selected.

Block Copy

BLOCK COPY

Test by yourself

This option will enable you to mark a block, copy it to buffer and, if desired, move and copy it to another part of the page. When this option is selected, a small rectangle marked by dashed lines will appear. To move this rectangle simply use the arrow keys or the mouse. To resize the rectangle hold the SHIFT key pressed and use the arrow keys or move the mouse. This rectangle will mark the block to be copied or moved. When the rectangle is marking the desired block, use the following keys:

ESC	to cancel selection
DEL	(right mouse button) to move block into buffer and continue editing

INS	(middle mouse button) to copy block into buffer and continue editing
ENTER	(left mouse button) to copy block into buffer and select the place on the page where the marked block should be copied or moved to
PGDN	to save block to disk
PGUP	to load block from disk

If ENTER was pressed, the marked block is automatically copied to the buffer. The position where the selected block should be copied or moved to should now be selected. For that again use the arrow keys or move the mouse. When the destination position on the page is selected, use the following keys:

ENTER	(left mouse button)	to copy the block
DEL	(right mouse button)	to move the block
ESC		to cancel

Remember that moving the block means that the source block that was marked at the beginning will always be erased.

Block Insert

BLOCK INSERT

Test by yourself

This function is exactly the second part of the Block Copy function. It will display the rectangle of the size of the block that is currently in the buffer. Then use the arrow keys to select the position where the block should be inserted. When the position is selected use the following keys:

ENTER	(left mouse button)	insert the block from buffer to the page
ESC	cancel insertion of block	

Remember that for inserting the block into buffer the Block Copy function should be used.

Local Commands

LOCAL COMMANDS

Information

The commands in a command line having a point (.) as the first character are called the local commands. They are not part of the Teletext Data Generator but are executed directly by the Editing Terminal part of the software. The following is the list of local commands:

Configuration commands:	.CONFIG
	.SWITCH
	.KBD

Local pages command: .M

Import command: .IMP

Miscellaneous commands: .MEM

.CHSET

Exit commands: .EXIT

.EXITSAVE

.EXITNOSAVE

Configuration commands

CONFIG COMMANDS

Test by yourself

.CONFIG

This command will enable changing the system configuration as when the Editing Terminal is started for the first time. See the section "Configuration" for details.

.SWITCH

This command is used to switch between the full screen and CCT compatible display. See the "Configuration" section for details.

.KBD [drivername]

This command selects a new keyboard driver.

Example: .KBD D selects German CAPS LOCK keyboard driver

.KBD D1 selects German SHIFT LOCK keyboard driver

Local pages command

LOCAL PAGES COMMAND

Test by yourself

.M local page number

This command enables mixing of the page on screen with another local page. The local page number of the page for mixing has to be specified after the .M command.

Example: .M 12 will mix the page on the screen with the local page 12

The priority of the page 12 that is being copied to the page on screen is lower. The character from the page 12 is only copied if the space character is occupying that place in the page on screen (not attribute). The local page number is shown in the upper right part of the screen (e.g. P01). Mix will take place only in the margin area of the page on screen. Definition of margins is described in another section of this manual.

Import & export commands

IMPORT & EXPORT COMMANDS

Test by yourself

.IMP [filename]

This command can be followed by a filename. It enables importing data from other formats to a teletext page. See the Importing and Exporting Data section of this manual for details on possible data transformation at import.

A window of the size of the margins of the page will appear over the data from the specified file. This means that using the arrow keys, PgUp, PgDn, Home and End you can move over the file and select the part that should be imported. The arrow left and right keys will move between words in the file. When finished selecting, press RETURN to import the data or ESC to leave the page unchanged.

Miscellaneous commands

MISC. COMMANDS

Test by yourself

.MEM

This command is used to display the amount of free memory (KB) when Editing Terminal is running.

.CHSET [character set]

Sets the character set for the current page. The following character sets are allowed:

CS	Czechoslovak
D	German
F	French
GB	English
I	Italian
PL	Polish
S	Swedish
SP	Spanish

6.7.5 Exit commands

.EXIT

Exits the Editing Terminal and returns to normal operation of the Teletext Data Generator. The transmission of teletext is not interrupted. If the "Save Pages on Exit" option is enabled in the configuration and pages can not be saved to disk (disk not ready,...) an error message will appear. Check the disk or use the .EXITNOSAVE command.

.EXITNOSAVE

Exits the Editing Terminal program without saving pages to disk.

.EXITSAVE

Exits the Editing Terminal program with saving pages to disk. If the pages can not be saved an error message will appear.

Importing Data

IMPORTING DATA

Information

The Editing Terminal includes a powerful feature that enables importing data that is not in teletext format into teletext pages. This enables creation and editing of data not only within the Editing Terminal but also by different other PC applications. For importing data the local command .IMP is used.

The Import function supports 8 bit characters but at most one byte per character can be used. This means that all pure ASCII files can be imported. A support for importing special national characters is included. In the default configuration Import function is set to MSDOS Codepage 437 in the way that all 8 bit ASCII characters will be imported with accents if they are available in the ETT character code table, otherwise they will be imported without accents.

The Import function will always work in the currently active margins of the page.

Customizing Import Function

CUSTOMIZING IMPORT

Information

Only characters with codes greater 31 and 13 (CR) can be imported to a teletext page. All characters with codes lower than 32 (except 13) are ignored.

When importing data the characters from the input file are transcoded via the Import Transcode table to the ETT character code table. The initial Import Transcode Table is set in the way that characters from PC-8 character set are correctly transcoded to Editing Terminal characters. If they are not available they will be either transcoded to characters without accents or to space (32). Colours can initially not be imported as no characters from the input file are transformed to codes lower than 32 (teletext attributes).

On the other hand changing the Import Transcode Table enables transcoding any character from the input file to any character of the ETT character code table (also teletext attributes).

To change entries in the Import Transcode Table a file ETTIMP.INI has to be created either in the where the Teletext Data Generator is installed (usually C:\KODS).

The file ETTIMP.INI can contain many lines of the following structure:

```
193 = 001       ; convert 191 to 1 (red colour in ETT code table)

254 = 065       ; convert 254 to 65 (A in ETT code table)
```

All text behind ; will be ignored. The lines will have the following meaning:

Character 193 from the input file will be converted to ETT code 1 (RED colour), character 254 from the input file will be converted to ETT code 65 (A).

If you need importing teletext attributes then our recommendation is to use the range 192 (for 0 in ETT - black) to 223 (31 in ETT). So add the following lines to ETTIMP.INI:

```
192 = 000

193 = 001

...

223 = 031
```

The local command .IMP will always display a window over the specified import file to enable selecting the part of the file that should be imported.

To enable the easiest possible mixing of imported data and already created teletext graphics (headers of a page) the local command .M should be used.

The following is an example of how to import data and mix it into already created graphics without using the command .M:

The page with graphics should be on the screen. Select margin area where data should be imported to (graphics should be out of margins). Use the keys ALT arrows and SET MARGINS to do so. Execute the local command .IMP and select the files to import from (command can also be .IMP filename.ext). Then select the part of the input file to be imported and press Enter.